

LONDON- WEST MIDLANDS ENVIRONMENTAL STATEMENT

Volume 5 | Technical Appendices

Transport Assessment (TR-001-000)

Part 1: Introduction

Traffic and transport

November 2013

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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

A report prepared for High Speed Two (HS2) Limited.

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1 Introduction

1.1 Background to the Transport Assessment

- 1.1.1 This Transport Assessment (TA) has been prepared on behalf of High Speed 2 Limited (HS2 Ltd) and addresses the wider transport impacts of the Proposed Scheme. HS2 Ltd has prepared this TA for the first phase of HS2 but the TA also considers the impacts of the full Phase Two forecast passenger demands. This introduction provides an overview of the approach adopted, which is considered in greater detail in subsequent sections.

The Proposed Scheme is illustrated in

- 1.1.2 Figure 1-1 and will create a new high-speed rail link from London to the West Midlands, with links to the West Coast Main Line (WCML) for travel beyond the high-speed route. It includes new platforms at London Euston for the high-speed services, a new station linked to the Great Western Main Line (GWML) and Crossrail at Old Oak Common, a new station, Birmingham Interchange, adjacent to Birmingham International station and a new station at Curzon Street in central Birmingham adjacent to Moor Street station.
- 1.1.3 During construction there will be potential impacts of construction activities including: movement of the workforce and construction materials; and the potential impacts of changes to highway and non-motorised users' routes - either temporarily or permanently. There may also be wider effects due to required changes to National Rail infrastructure and services.
- 1.1.4 In operation, the main transport impacts will relate to passengers and staff accessing stations and depots and the impact of related changes to transport networks.
- 1.1.5 However, the nature of HS2 is that there will inevitably be wider transport impacts of its services beyond the immediate areas directly affected. For example, many of the users of HS2 will be diverted from other rail services or car or air trips. In addition, as a consequence of the introduction of HS2, train paths on the WCML will become available for use by other services (and existing services will become less crowded). These effects are also captured and considered in this TA.
- 1.1.6 The TA has been developed in accordance with the National Planning Policy Framework (NPPF) and the Department for Transport's (DfT) Guidance on Transport Assessments (2010). It also seeks to follow local guidance where appropriate; in particular Transport for London's (TfL) Transport Assessment Best Practice Guidance (2010). These are considered in more detail in the policy section (section 2) of this TA and also in considering methodology (section 4).

Figure 1-1: The Proposed Scheme



1.1.7 The Scope and Methodology Report¹ (SMR) for HS2 sets out the necessary topics that must be addressed in considering the environmental effects of HS2. The TA addresses all of the topics identified in the SMR and ensures that where thresholds are set within the SMR the analysis is sufficient, as a minimum, to address all potential relevant impacts and effects.

¹ HS2 Scope and Methodology Report (Volume 5: Appendix CT-001-000/1) and HS2 SMR Addendum (Volume 5: Appendix CT-001-000/2)

- 1.1.8 In this TA, the HS2 route has been split into sections, first at a regional level and then at a local Community Forum Area (CFA) level. This ensures that all stakeholders are given a clear local picture of the likely impacts together with the adopted approach to the design of the stations, permanent way and infrastructure. This also ensures consistency with the overall Environmental Statement (ES) structure. In addition, the approach reflects the different methodologies appropriate in the different areas, particularly London, Country sections and in the West Midlands.
- 1.1.9 The Proposed Scheme has been assessed for both the construction and operational phases. For the operational phase this will include assessment of Phase One (London West Midlands - LWM) alone and an assessment of the full Phase Two network's effects upon the Phase One infrastructure. In both cases the basis for the assessment assumes existing and committed development in the local area with forecast growth in population and development using appropriate methods in each area providing, in effect, a cumulative assessment. Of particular importance are major construction activities and, in the operations phase, stations and depots.
- 1.1.10 The study area focuses upon, in general, the immediate route corridor of the Proposed Scheme and the wider areas around stations and depots. The study area has been extended where necessary to include key roads and junctions further afield and public transport networks where circumstances indicate impacts are likely to be significant.
- 1.1.11 During construction such effects are most likely to be the result of construction traffic and mass haul of excavated material or fill to/from the wider road network. In operations this is the result of passenger dispersal on the wider highway and public transport networks (particularly in London) resulting in the potential for increased traffic flows and congestion and in increased crowding on public transport.
- 1.1.12 To address both construction and operation the assessment scenarios for the Proposed Scheme compare future baseline and the Proposed Scheme effects for:
- construction – 2021, all impacts are considered against this single year with the impact of individual or overlapping activities considered as necessary;
 - operation – 2026, opening year with Phase One services; and
 - operation - 2041, with Phase One services and separately with Phase Two services in operation.
- 1.1.13 Generally, the TA focuses on the impacts in the AM (08:00-09:00) and PM (17:00-18:00) week-day peak. The Proposed Scheme has been appraised as appropriate through a combination of strategic and detailed modelling exercises and more direct assessment of impacts. As discussed in the methodology section, the specific approaches vary according to the different sections of the route and by the nature of the impact. The modelling work ensures the effects of construction and operation are robustly considered.

- 1.1.14 Having identified the impacts of the Proposed Scheme, the TA considers potential transport mitigation measures that might be necessary to address the more substantial impacts. Where reasonably practicable the Proposed Scheme has 'designed out' the impacts, with mitigation an integral part of the design.
- 1.1.15 In considering mitigation measures these need to be proportionate to the potential impact. For necessary off-site mitigation the general approach has been to identify a feasible and effective option (or options) that would address the mitigation need. Alongside appropriate design, important elements in the overall approach to mitigation are the draft Code of Construction Practice² (CoCP) and the commitment to a framework travel plan (Annex A) providing for construction and operational travel plans.

1.2 Transport Assessment Structure

- 1.2.1 The reporting of the assessment has been split into a series of sections as noted above to enable the potential impacts to be clearly set out. These are principally at a regional level (London, Country and West Midlands) and within each of the regional sections the impacts are reported within each CFA, broadly in a south to north direction. In addition, route-wide and off-route impacts are set out separately.
- 1.2.2 The structure of this TA follows:
1. Introduction
 2. Policy and guidance
 3. HS2 Proposed Scheme
 4. Route-wide methodology and assumptions
 5. Baseline conditions
 6. London assessment (CFAs 1 to 6)
 7. Country assessment (CFAs 7 to 22)
 8. West Midlands assessment (CFAs 23 to 26)
 9. Route-wide and off-route assessment
- Annexes
- A: Draft framework travel plan
 - B: Baseline survey reports
 - C: Model performance reports
 - D: Traffic flows used in Air Quality assessments

² HS2 draft Code of Construction Practice - CT-003-000/1

2 Policy and guidance

2.1 Introduction

- 2.1.1 This TA has been developed in the context of national, regional and local policy priorities and requirements. As a national scheme to be considered by Parliament through the Hybrid Bill process, the most critical policies are national. However, as far as practicable the TA has been developed to respect regional and local policies and priorities.
- 2.1.2 This chapter sets out the relevant policy documents and guidance which have been considered and taken into account in the preparation of this TA.
- 2.1.3 In common with the overall approach for this TA, policies have been grouped within the key regional areas of London, the Country sections of the route and the West Midlands. Consequently this chapter covers the following geographical areas of coverage:
- International/European policy and guidance;
 - National policy; and
 - Regional and local transport policy and guidance:
 - London regional and local policy;
 - Country regional and local policy; and
 - West Midlands regional and local policy.

2.2 International/European policy and guidance

- 2.2.1 European Spatial Development Perspective, EC (1999): This recognises that efficient transport is a basic prerequisite for strengthening the competitive situation and social and economic cohesion of the European Union (EU). This European Commission (EC) document also restates the importance of the trans-European transport networks (TEN-T) that were originally introduced under the Treaty of Maastricht in 1996 and were designed to guarantee optimum mobility and coherence between the various modes of transport in the EU.
- 2.2.2 European Transport Policy for 2010: A Time to Decide, EC (2001): This contains proposed measures aimed at developing a European transport system capable of shifting the balance between modes of transport, revitalising the railways, promoting transport by sea and inland waterways and controlling the growth in air transport.

- 2.2.3 High Speed Europe – A Sustainable Link between Citizens, EC (2010): This states that high speed lines offer European citizens a safe, fast comfortable and ecological mode of transport. This again reaffirms the inclusion of high-speed railways within the trans-European transport network (TEN-T) and that high-speed railway network expansion projects are being planned in UK.
- 2.2.4 2011 White Paper – Roadmap to a Single European Transport Area, EC: identifies transport as fundamental to our economy and society. It also considers mobility vital for the internal market and for the quality of life of citizens as they enjoy their freedom to travel. The paper states that transport enables economic growth and job creation and that it must be sustainable. The White Paper also promotes the introduction of high-speed rail networks, including the completion of a European high-speed rail network by 2050.
- 2.2.5 Connecting Europe Facility – Investing in Europe’s Growth 2014 – 2020, EC (2011): This will be a key instrument to promote growth, jobs and competitiveness through targeted infrastructure investment in the development of high-performing sustainable and efficiently interconnected trans-European networks including transport. This will include building missing links, removing bottlenecks and upgrading infrastructure.
- 2.2.6 Transport Infrastructures: TEN-T, Revision of TEN-T Guidelines, EC (2011): Published at the same time, these guidelines propose the updating and adjustment of the existing TEN-T and new network. This includes a new core network that will carry the main concentration of trans-national flows for both passengers and freight. The core network will be supported by a comprehensive network of routes that will feed into the core network at national and regional levels ensuring full coverage of the EU and accessibility to all regions. The core network is expected to be completed by 2030 and the comprehensive network by 2050. At present, HS2 is included in the comprehensive network as “the consultation process in the UK is on-going and results will be known soon; for the moment, no inclusion in the core network is possible.”

2.3 National policy

The National Planning Policy Framework (2012)

- 2.3.2 The National Planning Policy Framework (NPPF) replaces all Planning Policy Statement (PPS) and Planning Policy Guidance (PPG) documents previously detailing the Government’s planning policies for England.
- 2.3.3 The NPPF promotes active management of patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable

- 2.3.4 Section 1 of the NPPF outlines the policies which promote economic growth. In particular, paragraph 18 states that the Government is committed to securing economic growth in order to create jobs and prosperity. Paragraph 19 further states that significant weight should be placed on the need to support economic growth through the planning system.
- 2.3.5 Section 4 of the NPPF outlines the policies which promote sustainable transport. Those policies which are considered of relevance to the development proposals are outlined below:
- 2.3.6 Paragraph 29: “transport policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives. Smarter use of technologies can reduce the need to travel. The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel”.
- 2.3.7 Paragraph 30: “encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport”.
- 2.3.8 Paragraph 31: “local authorities should work with neighbouring authorities and transport providers to develop strategies for the provision of viable infrastructure necessary to support sustainable development, including large scale facilities such as rail freight interchanges, roadside facilities for motorists or transport investment necessary to support strategies for the growth of ports, airports or other major generators of travel demand in their areas”.
- 2.3.9 Paragraph 32: “all developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure safe and suitable access to the site can be achieved for all people improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe”.
- 2.3.10 Paragraph 34: “Plans and decisions should ensure developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised”.
- 2.3.11 Paragraph 35: “Plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people. Therefore, developments should be located and designed where practical to:
 - accommodate the efficient delivery of goods and supplies;

- give priority to pedestrian and cycle movements, and have access to high quality public transport facilities;
- create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones;
- incorporate facilities for charging plug-in and other ultra-low emission vehicles; and
- consider the needs of people with disabilities by all modes of transport”.

2.3.12 Paragraph 36: “A key tool to facilitate this will be a Travel Plan. All developments which generate significant amounts of movement should be required to provide a Travel Plan”.

2.3.13 Paragraph 75: “Planning policies should protect and enhance public rights of way and access. Local authorities should seek opportunities to provide better facilities for users, for example by adding links to existing rights of way networks including National Trails”.

DfT Guidance on Transport Assessments (DfT 2007)

2.3.14 DfT Guidance on Transport Assessments provides guidance on whether a full Transport Assessment was required under the then Planning Policy and Guidance 13 on Transport or whether a simplified Transport Statement (TS) is acceptable. It assists in determining whether an assessment may be required and if so, what the level and scope of that assessment should be. It sets out detailed guidance on the content and structure of Transport Assessments.

2.3.15 Despite the introduction of the NPPF, the guidance remains valuable in setting the scope of transport assessments anticipated by the NPPF. It applies to England only, and not Scotland, Wales or Northern Ireland and indicates that developers should also have regard to any specific current guidance issued by local authorities. In particular, developers operating in the vicinity of London should note the guidance issued by TfL. Planning applications meeting the criteria for referral to the Mayor should follow TfL’s best practice guidance (now Travel Planning for new Development in London, 2011).

DfT May 2012 Business Plan (2012-2015)

- 2.3.16 The DfT May 2012 Business Plan (2012-2015) sets out a firm commitment to HS2 and high speed rail, saying that the Coalition Government's priority to deliver their commitments on high speed rail is to carry out the preparation needed to start construction of the first phase of a high speed rail network for Britain early in the next Parliament. HS2 will increase capacity, connectivity and promote economic growth. The latest National Infrastructure Plan (Update 2012) was published in December 2012. This Update reports that to meet commitments in the National Infrastructure Plan 2011, the Government announced in January 2012 its decision to proceed with a National High Speed Rail network from London to Birmingham, continuing onto Manchester and Leeds. The Update identified this will deliver the essential capacity and connectivity that cities and regions across the UK need to thrive, attract investment and secure their long-term economic prosperity;
- 2.3.17 It goes on to state that HS2 could make a significant contribution to improved transport in the UK with the potential for wide ranging environmental, economic and social benefits that support these national and EU principles for transport development. The National Infrastructure Plan 2010 identified investment in a high-speed rail network as one of the main ways the rebalancing of the economy can be achieved. The Plan states "a new high speed rail network could transform journey times on key inter-urban routes and radically reshape the UK's economic geography: connecting this country's great cities and international gateways and helping bridge the North-South divide...".

The Eddington Transport Study - The Case for Action (2006)

- 2.3.18 The Eddington Transport Study set out a framework for transport's contribution to economic growth and identified three key priorities for long-term transport investment, defined as the:
- UK's growing and congested urban areas and their catchments; and
 - key international gateways; and key inter-urban corridors.
- 2.3.19 To meet future transport needs in these areas, the report recommended that the first priority should be to focus on the performance of existing networks before considering new links, and Sir Rod Eddington proposed a "sophisticated policy mix" to achieve this. This policy mix was to be developed through careful assessment of the full range of policy options, including pricing, better management and infrastructure improvements. This approach underpins the Government's current transport policy framework, which uses the full range of measures to increase capacity and improve performance and connectivity across all transport modes.

Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World (2007)

- 2.3.20 Towards a Sustainable Transport System: Supporting Economic Growth in a Low Carbon World (2007) (TaSTS) sets out the previous Government's response to recommendations made in The Eddington Transport Study (2006). It set out measures to improve the contribution of transport to economic growth and productivity.
- 2.3.21 Rail policies set out between February and July 2011, the Government launched a national consultation on High Speed Rail: Investing in Britain's Future. The January 2012 Decisions and Next Steps report on this set out the Government's proposed strategy and decision to proceed with a national high speed rail network for Britain and the route for an initial line between London and the West Midlands. It also set out the Government's confirmed strategy for high speed rail. The documents demonstrate that a new national high speed rail network is the best option for dealing with challenges from escalating capacity pressures, including long-distance travel but also for commuter and freight services. The rail network needs to be in a position to play the lead role in delivering new capacity. The fastest increase in demand on the rail network over recent years has been in long-distance travel, and this growth is forecast to continue. Growing demand is placing increasing pressure on the capacity of Britain's key rail routes. The Government's assessment is that the short-term fix of further upgrading of the existing network is not a sustainable long-term approach for our key north-south lines. A new strategic approach is required. As well as providing vital capacity for passengers, the report says HS2 will help to promote national economic growth and support the Midlands and the North to fulfil their economic potential.
- 2.3.22 In their inquiry report into High Speed Rail published on 8th November 2011 the House of Commons Transport Committee reached conclusions and recommendations on what they believed the key issues were. They supported a high-speed rail network for Britain, developed as part of a comprehensive transport strategy also including the classic rail network, road, aviation and shipping. They believed that the Government's HS2 proposal could form part of this network and provide substantial improvements in capacity and connectivity for inter-urban travel between our major cities. Furthermore the released capacity on the classic rail network would also enable widespread improvements on local and regional rail services. They also however called upon the Government to consider and to clarify a number of matters further in progressing and before it reaches its decision on HS2, including provision of greater clarity on the policy context, the assessment of alternatives, the financial and economic case, the environmental impacts, connections to Heathrow and the justification for the particular route being progressed. The Government's response to these matters was published on 23 January 2012.

Aviation Policy Framework

- 2.3.23 In March 2013 the Government published its Aviation Policy Framework, which in conjunction with relevant policies and any decisions the Government may take in response to recommendations made by the Independent Airports Commission, will fully replace the earlier 2003 Air Transport White Paper. Whereas the 2003 Policy sought to set out in detail which specific developments would be supported at particular airports across the UK, the 2013 document does not. The Government has established the Independent Airports Commission led by Sir Howard Davies to consider the matter of airport capacities. The Framework states that Government will ensure that its national strategies for aviation and high-speed rail are aligned, providing a better travel offer to the UK travelling public. It also recognises that when HS2 Phase One opens, rail passengers into Heathrow would start to benefit from significantly faster journey times, marking an improvement in rail access. Passengers from the Midlands and North would be able to access the Heathrow Express service from Old Oak Common station; this would make the journeys quicker and also mean it would no longer be necessary to travel via central London.

Walking and Cycling Action Plan (DfT, 2004)

- 2.3.24 The Walking and Cycling Action Plan, produced by the DfT in 2004, promotes the elevation and greater prioritisation of pedestrians over other modes of transport, with pedestrians in most instances on top of the transport modal hierarchy, followed by cyclist, public transport and lastly private vehicles.
- 2.3.25 In relation to the promotion of walking and cycling, the main objectives of the Walking and Cycling Action Plan are to:
- create places in which people want to walk and cycle;
 - provide highway quality facilities for safe walking and cycling;
 - promote educational resources, training and marketing to influence travel behaviour; and
 - monitor success through better targets and indicators.

Highways Agency

- 2.3.26 The Highways Agency's Strategic Plan 2010 - 2015 sets out Goals and Measures of Success for the Highways Agency (HA), whilst their Sustainable Development Plan 2012 - 2015 outlines the HA's emphasis on sustainability in its approach to the management, operation and improvement of the Strategic Road Network.
- 2.3.27 The Sustainable Development Plan is seen as:
- Strengthening the HA's contribution to a sustainable transport system;
 - Supporting national economic recovery;

- Meeting the diverse needs of all the HA's customers;
- Promoting national wellbeing; and
- Continuing to develop our sustainable approach.

2.3.28 In addition, in its approach to planning and development issues and in “supporting development and facilitating growth”, the HA has developed a ‘protocol’ process. Running through this process, the HA emphasises the role of sustainability and sustainable transport provisions, where the HA sees itself as a key partner for sustainable development. The HA emphasises the need to take opportunities to reduce the need to travel, particularly by car, and maximise opportunities for public transport, with a view to minimising the need for changes to the Strategic Road Network.

Network Rail

2.3.29 Network Rail’s (NR) overall position on HS2 is summarised by the following statements:

- “High Speed Two (HS2) will provide a major capacity and connectivity boost for Britain’s railway.” - Better Connections - Options for the integration of High Speed 2 - July 2013; and
- “When the new high speed rail network completes it will not only transform rail connectivity in Britain it will also provide the step-change in capacity needed to deliver major improvements for existing rail users” - <http://www.networkrail.co.uk/improvements/high-speed-rail/>

2.3.30 As part of its Long Term Planning Process, NR’s Route Utilisation Studies (RUSs) seek to balance rail supply and demand and set out a longer term vision for improvements across the rail network, identifying ‘gaps’ (defined as “what the system can currently supply in terms of infrastructure and train services and what is likely to be demanded of the system now and in the future for passenger and freight services at suitable levels of performance”) and ‘options’, together with priorities for rail investment.

2.3.31 The West Coast Main Line RUS, with a plan period of thirty years, was published in July 2011 and identifies gaps and sets out priorities for rail investment along this part of the network to accommodate the expected numbers of passengers and volumes of freight. To do this, it considers a number of options, including running longer trains, more long distance trains in the off-peak, faster services between Birmingham and Manchester and some additional fast commuter services into London. It also supports the need to develop capacity for freight. However, it notes that the West Coast Main Line (WCML) will “effectively be full” by 2024, particularly at the southern end.

- 2.3.32 The WCML RUS notes that HS2 would provide significant additional capacity on WCML corridor, addressing gaps identified in the RUS, improving regional links, supporting national economic competitiveness and reducing carbon emissions by encouraging more people to shift from roads and air to rail, with the following extracts from the RUS particularly relevant to HS2:
- “The RUS, therefore, supports the development of the proposed new high speed line, initially between London and the West Midlands and then onwards to Manchester and beyond.”
 - “The proposed new line [HS2] would operate long distance services and would release significant capacity on the classic network which can be utilised by both passenger and freight services. This would relieve the substantial overcrowding that is forecast on commuter services, as well as relieving the pressure on long distance capacity.”

2.4 London regional and local transport policy and guidance

- 2.4.1 This section summarises key points from London Policies and Guidance for those authorities that are likely to be directly affected by HS2. This includes the Greater London Authority (GLA), TfL and the London Boroughs (LB) of Camden, Islington, Kensington and Chelsea, Hammersmith and Fulham, Ealing, Brent, Hillingdon and City of Westminster. Given the stations at Euston and Old Oak Common, these areas are of particular importance.

London regional transport policy

The London Plan (GLA, July 2011)

- 2.4.2 The London Plan 2011 is the Mayor of London's Spatial Development Strategy produced by the GLA. It sets out the strategic planning guidance for London planning authorities. The London Plan sets out the integrated economic, environmental, transport and social framework for the development of London over the next 20-25 years. The Plan takes the year 2031 as its formal end date and its over-arching vision is supported by six detailed objectives for London:
- A city that meets the challenges of economic and population growth;
 - An internationally competitive and successful city;
 - A city of diverse, strong, secure and accessible neighbourhoods;
 - A city that delights the senses;
 - A city that becomes a world leader in improving the environment; and
 - A city where it is easy, safe and convenient for everyone to access jobs, opportunities and facilities.

- 2.4.3 The last objective of the plan relates specifically to transport. Policies within the London Plan of relevance to the proposed development at Euston Station are outlined in Policy 6.1 – strategic approach, which advises that the mayor will work with all relevant partners to encourage the closer integration of transport and development by:
- encouraging patterns and nodes of development that reduce the need to travel, especially by car;
 - seeking to improve the capacity and accessibility of public transport, walking and cycling, particularly in areas of greatest demand;
 - supporting development that generates high levels of trips at locations with high public transport accessibility and/or capacity, either currently or via committed, funded improvement;
 - improving interchange between different forms of transport, particularly around major rail and Underground stations, especially where this will enhance connectivity in outer London; and
 - promoting greater use of low carbon technology so that carbon dioxide and other contributors to global warming are reduced.
- 2.4.4 Policy 6.1 – strategic approach – documents a number of transport schemes, including High Speed Rail 2 (HS2) which incorporates a route from London to West Midlands and beyond. The improvements are secured by Policy 6.2 – providing public transport capacity and safeguarding land for transport which notes that development proposals that do not provide adequate safeguarding for the schemes should be refused.
- 2.4.5 Policy 6.3 – assessing effects of development on transport capacity - outlines that development proposals should ensure that impacts on transport capacity and the transport network, at both a corridor and local level, are fully assessed. Development should not adversely affect safety on the transport network. Where existing transport capacity is insufficient for the travel generated by proposed developments, and no firm plans exist for an increase in capacity. Boroughs should ensure that the development proposals are phased until it is known that these requirements can be met. The policy notes that the use of Travel Plans and addressing freight issues can help reduce the impact of development on the transport network.
- 2.4.6 Policy 6.4 – enhancing London’s transport connectivity - outlines that The Mayor will work with strategic partners in neighbouring regions to develop efficient and effective cross boundary transport services and policies including exploring the scope for high speed rail services reducing the need for short-haul and some medium-haul air travel. Policy 6.4 also outlines a commitment to improve the public transport system in London and states the “increase public transport capacity by.....improving and expanding London’s international and national transport links for passengers and freight (for example, High Speed 2)”

- 2.4.7 Policy 6.7 – better streets and surface transport - notes that high levels of priority should be provided to bus routes and there should be direct and pleasant walking routes to stops. Additionally provision should be made for retaining or creating new interchanges where appropriate. Safe, convenient and direct pedestrian access is provided from the proposed development to public transport facilities and other important land uses in the area. The proposed scheme will include the redevelopment and enhancement of Euston Station as a major public interchange and the creation of the major new sub-regional interchange at Old Oak Common.
- 2.4.8 Policy 6.9 – cycling - presents measures to increase cycling mode share in London to 5 percent by 2026. To support this, developments should provide cycle parking to at least the minimum standards, provide showers and changing facilities and facilitate the major cycling schemes in London (Cycle Super Highways / Cycle Hire).
- 2.4.9 Policy 6.10 – walking - recommends the use of shared space principles with simplified streetscape, de-cluttering and access for all. Developments should therefore ensure high quality pedestrian environments and emphasise the quality of pedestrian and street space. It points to the 'Legible London' pedestrian way-finding system as a successful measure to support walking journeys.
- 2.4.10 Policy 6.13 – parking - outlines the need to seek an appropriate balance between promoting new development and preventing excessive car parking provision that can undermine cycling, walking and public transport use. As such, car parking should reduce as public transport accessibility (measured by PTAL) increases. The policy recognises the requirement to provide parking for disabled people which should be suitably designed and located.
- 2.4.11 A number of alterations to the London Plan 2011 were proposed as part of The London Plan Revised Early Minor Alterations, published by the GLA for public consultation in June 2012 and adopted on 11 October 2013. The minor alterations include revisions to paragraphs 6.35 and 6.36 supporting Policy 6.9 - Cycling. The changes relate to the provision of visitor cycle parking and the provision of secure and sheltered cycle parking. The London Plan Revised Early Minor Alterations also provides revised cycle parking standards that should be considered as part of any development proposals and are therefore applicable to any development at Euston Station.

The Mayor's Transport Strategy (GLA, 2010)

- 2.4.12 The Mayor's Transport Strategy (MTS) was published in May 2010. The MTS is a statutory document developed alongside the London Plan as part of the strategic policy framework to support and shape the economic and social development of London over the next 20 years. It sets out the Mayor's vision and describes how TfL and its partners, including the London Boroughs, will deliver that vision.
- 2.4.13 The key transport priorities are:

- Support economic development and population growth;
- Enhance the quality of life for all Londoners;
- Improve the safety and security of all Londoners;
- Improve transport opportunities for all Londoners;
- Reduce transport contribution to climate change and improve resilience; and
- Support delivery of the London 2012 Olympics and Paralympic Games and its legacy.

2.4.14 The policies that are relevant to the proposed scheme are:

- Policy 2 indicates the Mayor's support for sustainable capacity enhancements to inter-regional, national and international rail and coach services, high-speed rail hubs and the Strategic Road Network (SRN) serving London;
- Policy 4 seeks to improve people's access to jobs, business access to employment markets, and business to business access;
- Policy 5 seeks to ensure efficient and effective access for people and goods within central London through providing improved central London connectivity and appropriate capacity. This will include improving access to major public transport interchanges for pedestrians, cyclists and by public transport;
- Policy 13 aims to expand the capacity and quality of public transport services, improve passenger comfort and customer satisfaction, reduce crowding, and improve road user satisfaction; and
- Policy 24 will take the necessary steps to deliver the required contribution from ground-based transport to achieve a 60 per cent reduction in London's CO₂ emissions by 2025.

2.4.15 The development of high speed rail hubs at Euston and Old Oak Common Stations support sustainable capacity enhancements and increase capacity of rail journeys to ease overcrowding and capacity issues on other rail routes serving the Midlands. They will provide a sustainable means of access to jobs and business across the country, reducing the need for internal business air travel and business related road travel. The Euston Station development will provide significant access improvements for pedestrians, cyclists and public transport to Euston Station as a major public transport interchange and the new interchange station at Old Oak Common with its links to Crossrail and GWML services substantially improves accessibility to and across west London.

Travel Planning for new Development in London (TfL, 2011)

2.4.16 This publication provides guidance on producing effective travel plans for new developments, ensuring the movement of people and goods is managed for the life of the development and also incorporates guidance on deliveries and servicing plans.

- 2.4.17 Thresholds are set out in the guidance for the level of travel planning required and in accordance with this guidance the development proposals at Euston Station will require strategic-level Travel Plans.

London local transport policy

LB Camden Local Development Framework, Core Strategy (LBC, 2010)

- 2.4.18 The Core Strategy helps the Council to define and plan for the future of the borough by:
- contributing to achieving the vision and objectives of our community strategy;
 - helping our partners and other organisations deliver relevant parts of their programmes;
 - covering the physical aspects of location and land use;
 - addressing factors that make places attractive, sustainable and successful (such as social and economic matters); and
 - balancing the needs of residents, businesses and future generations; and
- 2.4.19 The core strategy was adopted at a Full Council meeting on 8 November 2010
- 2.4.20 The LB of Camden (LBC) Core Strategy forms part of the Local Development Framework (LDF) suite of documents that together with the London Plan (GLA, 2010) set out the planning policies for LBC. The Core Strategy and development policies documents replace the Unitary Development Plan and were adopted by LBC in November 2010.
- 2.4.21 Policy CS2 – Growth Areas identify that development in Camden to 2025 will be concentrated in a number of locations which includes the major redevelopment to Euston Station.
- 2.4.22 With regards to transport, Policy CS11 (Promoting sustainable and efficient travel) states that “the Council will promote the delivery of transport infrastructure and the availability of sustainable transport choices in order to support Camden’s growth, reduce the environmental impact of travel, and relieve pressure on the borough’s transport network”.
- 2.4.23 In supporting growth in Camden and to promote walking, cycling and public transport, LBC will:
- promote key transport infrastructure and the availability of sustainable transport choices in order to support Camden’s growth, which will include the redevelopment of Euston Station and the provision of an improved public transport interchange;
 - improvements to encourage walking and cycling as part of the transport infrastructure works;
 - improve public spaces and pedestrian links across the borough, including

focusing public realm investment in Camden's town centres and the Central London area, and extending the 'Legible London' scheme;

- continue to improve facilities for cyclists, including the availability of cycle parking, helping to deliver the London Cycle Hire Scheme and enhancing cycle links; and
- work with TfL to improve the bus network and deliver related infrastructure, and support proposals to improve services and capacity on the Underground, London Overground and Thameslink.

2.4.24 As part of its approach to minimising the environmental impacts of travel, LBC will continue to limit the amount of parking available for private cars. Therefore, LBC will seek car-free development in the most accessible parts of the borough. It will also seek car-capped developments where the provision of additional on-street parking would be harmful to parking conditions.

LB Camden Local Development Framework, Development Policies (LBC, 2010)

2.4.25 Camden Development Policies forms part of the Council's LDF and sets out detailed planning policies that the Council will use when determining planning applications.

2.4.26 To deliver the aims of the Core Strategy, the Development Policies document includes Policy DP16 (The transport implications of development). This notes that the Borough will seek to ensure that development is properly integrated with the transport network and is supported by adequate walking, cycling and public transport links. It details the requirements for the assessment of new development proposals, and that the authority will expect:

- proposals to make appropriate connections to highways and street spaces, in accordance with Camden's road hierarchy, and to public transport networks;
- additional transport capacity off-site (such as improved infrastructure and services) where existing or committed capacity cannot meet the additional need generated by the development. Where appropriate, the Council will expect proposals to provide information to indicate the likely impacts of the development and the steps that will be taken to mitigate those impacts, for example using transport assessments and travel plans;
- the Policy confirms that Transport Assessments will need to be completed in accordance with TfL's TA guidance; and
- Construction Management Plans will be a requirement of significant development proposals.

2.4.27 The Development Policies document also includes the following policies on transport:

- Policy DP17 - Walking, cycling and public transport - will expect new developments to provide appropriate, safe pedestrian and cycle links to promote sustainable travel and enhance accessibility;

- Policy DP18 - Parking standards - will seek to ensure that developments provide the minimum necessary car parking provision;
- Policy DP19 – Managing the impact of parking addresses the potential impacts of parking associated with development in terms of on-street parking conditions and wider environmental considerations;
- Policy DP20 - The movement of goods - outlines that LBC will expect developments to accommodate goods vehicles on site and seek opportunities to minimise disruption for local communities through effective management; and
- Policy DP21– Development connecting to the highway network - LBC will expect the development to be linked to the highway network in a way that avoids the use of local roads by through traffic and ensures the use of the most appropriate roads in accordance with Camden’s road hierarchy.

2.4.28 Camden Planning Guidance (CPG) provides advice and information on how LBC will apply its planning policies. LBC has prepared the CPG to support the policies in the LDF. The guidance is consistent with the Core Strategy and the Development Policies and "forms a Supplementary Planning Document (SPD) which is an additional 'material consideration' in planning decisions".

LB Camden Transport Strategy 2011-2031 (LBC 2011)

2.4.29 LBC’s Camden Transport Strategy (CTS) sets out the future direction for transport in Camden and describes the context of traffic and transport in the borough. The CTS incorporates the 2011 Local Implementation Plan (LIP). It has strong links with a number of Camden Council policies and strategies and with the relevant sub-regional transport plans (Central and North London), and other London Mayoral policies. The transport challenges it identifies include:

- Objective 1: Reduce motor traffic levels and vehicle emissions to improve air quality, mitigate climate change and contribute to making Camden a 'low carbon and low waste borough';
- Objective 2: Encourage healthy and sustainable travel choices by prioritising walking, cycling and public transport in Camden;
- Objective 3: Improve road safety and personal security for people travelling in Camden;
- Objective 4: Effectively manage the road network to manage congestion, improve reliability and ensure the efficient movement of goods and people;
- Objective 5: Develop and maintain high quality, accessible public streets and spaces and recognise that streets are about more than movement;
- Objective 6: Ensure the transport system supports Camden’s sustainable growth and regeneration as well as enhancing economic and community development;

- Objective 7: Ensure the transport system supports access to local services and facilities, reduces inequalities in transport and increases social inclusion; and
- Objective 8: Ensure that the provision of parking is fair and proportionate by considering the needs of all users, whilst also encouraging sustainable travel choices.

Camden Plan (2012)

2.4.30 The Camden Plan is a new five-year vision for Camden, setting out objectives and outcomes to be achieved by 2017. The Plan outlines five key objectives, including:

- providing democratic and strategic leadership fit for changing times;
- developing new solutions with partners to reduce inequality;
- creating conditions for and harnessing benefits of economic growth;
- investing in our communities to ensure sustainable neighbourhoods; and
- delivering value for money services by getting it 'right first time'.

2.4.31 All five objectives relate to developments within the transport infrastructure of the Borough, including additional investment into the existing as well as proposed public transport routes, nodes and interchanges.

Euston Area Plan (July 2013)

2.4.32 LBC, GLA and TfL have worked jointly to develop a vision and objectives for the Euston area which form the Basis of the Euston Area Plan (EAP). The EAP was released for consultation in July 2013 following initial public consultation in 2012. The EAP objectives are outlined below:

- prioritising local people's needs;
- securing excellent design;
- making the best use of new space above the station and tracks and opportunities for regeneration in the wider area;
- new streets above the station and tracks;
- boosting the local economy by reinforcing existing economic assets and businesses;
- creating sustainable development;
- improving the environment along Euston Road;
- promoting sustainable travel;
- enhancing existing public transport; and
- planning for future public transport.

- 2.4.33 The overarching spatial vision and objectives of the Euston Area strategy as outlined within the EAP are summarised below:
- securing long term benefits from station redevelopment for existing neighbouring communities and helping to mitigate the shorter term impacts of HS2;
 - focus growth and development at Euston Station, where significant new mixed use development will establish;
 - the station and tracks site as a major destination in its own right, and Regent's Park Estate, with regeneration and infill delivering new housing, including affordable housing;
 - enhancing Euston's role and image in the central London economy through world class station development and capitalising on the cluster of science and knowledge;
 - supporting institutions already in the area;
 - improving connectivity, particularly east-west pedestrian links to draw neighbourhoods together and improve access between Regent's Park, Euston, St Pancras and King's Cross stations;
 - enhancing links to the west end and reducing the barrier effect of Euston Road;
 - creating a network of new and improved open spaces, with a large new open space west of Euston Station;
 - seeking to ensure that growth and change can protect and enhance existing local centres, In particular Drummond Street and Eversholt Street; and
 - prioritising walking and cycling, and promoting enhanced interchange and public transport provision in a world class new Euston Station.
- 2.4.34 Key transport measures to mitigate HS2 and support growth and development generally in the area proposed include:
- measures to promote walking and cycling, including new routes and facilities, enhanced signage and significant public realm improvements, in order to reduce pressure on the public transport network;
 - enhancements to public transport infrastructure, including:
 - The delivery of Crossrail 2;
 - Significant enhancements to ticket hall and platform access for London Underground services; and
 - Improvements to bus facilities.
 - car free development;
 - appropriate taxi and private hire provision to meet the needs of station users;

- sustainable freight modes and minimising the impacts of freight; and
- measures to support the introduction of an ultra-low emissions zone at Euston.

LB Islington Core Strategy (LBI, 2011)

2.4.35 Islington's Core Strategy was adopted in February 2011 and forms part of the Council's LDF. The overriding vision of the document is to create a stronger and economically, environmentally and socially sustainable community. Its key transport objectives include:

- encouraging walking and cycling over public transport use and encouraging all of these over car use;
- improving transport connections to ensure that public transport capacity is sufficient to meet the needs of those who live, work and study in the borough and that capacity is also sufficient to allow access to work, study and leisure opportunities beyond the borough; and
- using significant transport improvements to lead regeneration.

LB Islington Transport Strategy (LBI, 2012)

2.4.36 The Transport Strategy was published in March 2012 as part of the Local Implementation Plan for Islington and relates to policies and strategies applicable between 2011 and 2031. Islington's transport objectives aim to make transport in the borough; fair, efficient, safe, secure, vibrant and healthy.

2.4.37 The transport policies identified within the Transport Strategy address the six transport objectives by way of ensuring that transport improvements:

- support local economic activity and growth;
- encourage healthier forms of travel;
- deliver a more effective use of the existing transport network;
- reduce physical barriers to transport;
- ensure safe, secure and accessible transport; and
- improve the quality public transport in Islington.

City of Westminster's Core Strategy (CoW, 2011)

2.4.38 The City of Westminster's Core Strategy was adopted in January 2011 as part of the Local Development Framework policies. The Core Strategy sets out the vision for CoW up to and beyond 2025. Seven strategic objectives are outlined as part of the Core Strategy. These include:

- accommodating sustainable growth and change that will contribute to enhancing London's role as a sustainable world class city;
- maintaining and enhancing the quality of life, health and well-being of

Westminster's residential communities;

- ensuring that Westminster's residents can benefit from growth and change, providing more employment and housing opportunities, safety and security, and better public transport and local services;
- to work with our partners to foster economic vitality and diversity, improved learning and skills, and improved life chances in areas of deprivation.
- managing the pressures on the city from its national and international roles and functions, business communities and tourism;
- accommodating the safe and efficient movement of growing numbers of people entering and moving around Westminster by facilitating major improvements to the public transport system, improving the public realm and pedestrian environment; and
- protecting and enhancing Westminster's open spaces, civic spaces and Blue Ribbon Network.

City of Westminster's Local Implementation Plan (CoW, 2011)

2.4.39

The CoW's Local Implementation Plan (LIP) was published in December 2011. The LIP Goals align with the Mayor's Transport Strategy and these are set out below:

- Objective 1 - supporting economic development and growth; including rail / underground improvements and smoothing traffic flows.
- Objective 2 - improving safety and security for all road users; including neighbourhood road safety schemes and audits.
- Objective 3 - minimising the impact of transport on the environment; including the implementation of an air quality management plan, smoothing traffic flows and making walking / cycling more attractive. Noise reduction requirements and minimising the impacts or servicing are also identified.
- Objective 4 - prioritising pedestrians and effectively managing allocation of highway space.
- Objective 5 - promoting healthier lifestyles and ensuring inclusivity; including the need to make walking / cycling more attractive and achieve step free access at all important transport connections.
- Objective 6 - improving efficiency and attractiveness of sustainable transport; including the implementation of improvements at rail / underground stations and improving bus journey times / passenger experience.

Royal Borough of Kensington and Chelsea's Core Strategy (RBK&C, 2010)

- 2.4.40 RBK&C's Core Strategy was adopted in December 2010 and presents policies and objectives for the borough until 2028. The key policy outlined in the document focuses on building on success, further developing the strong and varied sense of place of the borough. This includes, in particular, stimulating regeneration in North Kensington, Enhancing the reputation of international destinations within the borough and upholding the residential quality of life of its residents.
- 2.4.41 The seven objectives of the Core Strategy include:
- keeping life local, creating strong, effective local centres;
 - fostering vitality by enhancing the quality of life through cultural, creative and commercial uses;
 - creating better travel choices by making walking, cycling and public transport safe, easy and attractive to users;
 - creating an engaging public realm, endowing a strong local sense of place;
 - renewing the legacy for future generations;
 - having a housing diversity at a local level for the residents; and
 - respecting environmental limits.
- 2.4.42 The Core Strategy also identifies strategic issues, which include the drive to improve travel choices and reduce car dependency as well as getting better access onto the existing rail infrastructure.

RB Kensington and Chelsea's Local Implementation Plan (RBK&C, 2011)

- 2.4.43 Kensington and Chelsea's LIP identifies how the Borough will implement the MTS, as well as other local transport-related priorities. There are a series of initiatives included within the Delivery Plan, and a number of these relate to the implementation of new development opportunities, including HS2. The most relevant initiatives are as follows:
- permeability - the borough will seek to ensure that new development improves permeability by providing new streets, footpaths and cycle links for example links under and/or over the West London Line; and
 - construction traffic management plans - the borough will secure these plans for new developments that have the potential to cause disruption. The plans ensure that any traffic generated during construction is properly managed and parking suspensions are kept to a minimum.

LB Hammersmith & Fulham Core Strategy (LBH&F, 2011)

- 2.4.44 The Hammersmith & Fulham Core Strategy was adopted in October 2011. The Core Strategy sets out 19 Strategic Objectives. Objective 18 is of particular relevance to the HS2 scheme, proposing to ensure there is a high quality transport infrastructure, including a Crossrail station and a HS2 rail hub to support development in the north of the borough and improve transport accessibility and reduce traffic congestion and the need to travel.
- 2.4.45 In addition, the regeneration of the Park Royal Opportunity Area is identified as one of the key objectives of the borough, with the provision of the proposed Crossrail and/or HS2 rail link imperative in achieving the regeneration.
- 2.4.46 Furthermore the Core Strategy identifies Old Oak Common as a Strategic Site PR1 requiring redevelopment, the regeneration of which will be directly related to the proposed HS2 rail hub station with links to the new Crossrail Station and the West London Line.

LB Hammersmith & Fulham Development Management Local Plan (LBH&F, 2011)

- 2.4.47 The Hammersmith & Fulham Development Management Local Plan was published in July 2013 and forms part of the Hammersmith & Fulham Local Development Framework. The document sets out the development management policies to be used by the council in considering individual planning applications.
- 2.4.48 A strategic objective of the Development Management Local Plan is to ensure there is high quality transport infrastructure (as with the Core strategy, including a Crossrail station and a HS2 rail hub) to support development in the north of the borough and improve transport accessibility and reduce traffic congestion and the need to travel. Transport-related policies set out in the document are described below:
- Policy DM J1 of the document outlines the need for TA and Travel Plans to be included in planning applications and development proposals to identify the impact on congestion and traffic generation likely to be resulting from it;
 - Policy DM J2 outlines requirements for new developments to conform with the council's car parking standards, with policy DM J3 requiring that sufficient car parking is provided for blue badge holders and tenants of social/affordable rented housing;
 - Policy DM J5 outlines the need for increased opportunities for cycling and walking with developments required to provide safe and accessible pedestrian routes as well as safe and convenient cycling infrastructure; and
 - the road hierarchy within the borough is emphasised as part of policy DM J6, whereby development location will be assessed based on its proximity to the road network, whether it is located along strategic, distributor or local roads in the borough.

LB Hammersmith & Fulham Local Implementation Plan 2 (2011)

- 2.4.49 The Hammersmith & Fulham LIP, also known as the Transport Plan, provides objectives and scheme delivery through to 2031. The key Plan Objectives are:
- Objective 1 - Support sustainable population and employment growth in the five regeneration areas, including Old Oak Common and Hythe Road;
 - Objective 2 - Improve the efficiency of the borough's road network;
 - Objective 3 - Improve the quality of the borough's streets;
 - Objective 4 - Improve air quality in the borough;
 - Objective 5 - Make it easier for everyone to gain access to transport opportunities; and
 - Objective 7 - Reduce the number of people injured and killed on our streets.
- 2.4.50 The LIP states that, in relation to the provision of additional rail connections, the Borough will “campaign for additional rail stations, notably on the Central Line at Du Cane Road and HS2/Crossrail hub station at Old Oak Common.”

LB Brent Core Strategy (LBB, 2010)

- 2.4.51 The Core Strategy, adopted in July 2010, sets out the key elements of the borough's vision and is a central part of the LDF. The Spatial Planning Strategy identifies the following themes within this vision:
- be a dynamic London Borough, providing new jobs, homes, retail and major leisure attractions;
 - be fully integrated into the city with excellent public transport interchanges and connections to other strategic centres in London; and
 - retain its smaller centres which provide important local services to their immediate area.
- 2.4.52 The strategic objectives in the Core Strategy aim to achieve the four themes described above and include the following:
- to reduce the need to travel and improve transport choices;
 - to meet social infrastructure needs; and
 - to promote healthy living and create a safe and secure environment.

LB Brent Local Implementation Plan (LBB, 2011)

- 2.4.53 The Brent LIP was published in July 2011 and includes transport policies and objectives specific to the borough. The ten objectives outlined as part of the document include:
- facilitating regeneration;
 - better streets and placemaking;

- securing benefits from HS2;
- excellent network management;
- parking;
- sustainable transport and the environment;
- orbital bus services;
- an accessible and inclusive borough;
- reducing road danger; and
- improving customer experiences of the Underground and Overground rail network.

2.4.54 Objective Three of the ten-point-plan strives to support the development of HS2, in particular to secure the benefits to Brent regarding a new interchange station with Crossrail and HS2 - at Old Oak Common – which would be maximised by way of a sub-surface travelator linking Willesden Junction station, near Harlesden town centre.

2.4.55 The proposed interchange at Old Oak Common will be less than 800m from Willesden Junction and as such will be located at the borough boundary. It is considered likely to have a significant effect upon Brent, in particular Kensal Rise and Harlesden.

LB Ealing Adopted Development (Core) Strategy (LBE, 2012)

2.4.56 The Development Strategy 2026 is part of a portfolio of development plans that make up the Council's LDF.

2.4.57 Health, safety, prosperity and high quality of life are the key elements of the Ealing Vision for 2026. This includes promoting business and enterprise within the borough, ensuring viability and vitality of its town centres and supporting sustainable, safe and convenient transport networks, in particular improving the north-south transport links and promoting healthy travel behaviour as well as seeking to reduce the need for travel.

2.4.58 In addition the document states the boroughs intention "to support opportunities from Crossrail and HS2, working closely with Crossrail and HS2 planners to ensure the benefits to the borough are maximised". These benefits include improved accessibility; greater public transport capacity on the key east/west radial corridor in the borough; and a major potential contribution to the regeneration and economic development in town centres and other sites along the routes.

LB Ealing Local Implementation Plan (LBE, 2011)

2.4.59 The Ealing LIP details the policies and programme for delivering the MTS within each area.

- 2.4.60 LBE has adopted their second LIP which sets out projects and key priorities for 2011-2014. The main objectives include the following:
- improve road safety and reduce road danger on the Borough transport network for all users, in particular pedestrians, cyclists and motorcyclists;
 - increase sustainable travel capacity and key links in the Borough;
 - smooth the flow of traffic and improve journey time reliability for all road-users, particularly bus passengers, cyclists and pedestrians;
 - improve quality of life for residents, businesses and visitors to the Borough, protecting and enhancing the urban and natural environment;
 - promote healthy travel behaviour through a shift to more walking and cycling;
 - improve the quality of and access to Ealing's main town centres, neighbourhood centres and regeneration areas for all, including those with reduced mobility;
 - improve the condition of principal roads within the Borough for the benefit of all road users; and
 - reduce Ealing's contribution to climate change through transport related CO₂ emissions [and improve resilience to climate change].

Park Royal Opportunity Area Framework (GLA 2011)

- 2.4.61 The Park Royal Opportunity Area Planning Framework (OAPF) is supplementary planning guidance to the Mayor's London Plan. The OAPF sets out a framework for maintaining, protecting and growing areas of London with important industrial and manufacturing sectors as an integral part of our economy. The OAPF recognises the significant role that new mixed-forms of housing and employment can play in certain locations across Park Royal and maintains that new development can help create vibrant neighbourhoods and bolster existing communities.
- 2.4.62 The framework has been prepared in collaboration with LBs of Ealing, Brent, Hammersmith & Fulham, and Kensington & Chelsea. Other key stakeholders have included TfL and the Park Royal Partnership as well as involvement from local landowners, businesses and residents through public consultation.
- 2.4.63 The OAPF for Park Royal includes the proposed HS2 Old Oak Common Area. The current strategic vision for the Old Oak Common area is to:
- deliver a HS2 & Crossrail Interchange;
 - improve access to Park Royal at the four Gateways, Alperton and at Old Oak Common and into Kensal Canalside;
 - to secure successful redevelopment of major sites in these areas to deliver employment-led growth, high quality amenities and a better environment;
 - protect and maintain Park Royal as the largest industrial employment location

in London, supporting the clusters of food/drink, distribution/logistics and TV/film through facilities and services to support growth; and

- improve transport infrastructure including public transport services and facilities. Upgrade routes and facilities for pedestrians and cyclists, promote the use of rail and canal to encourage sustainable freight transport.

2.4.64 The policies within the framework document aimed at improving public transport and station access, minimising impacts from congestion, improving pedestrian and cycle environment are proposed should be a key focus for contributions from new development. The emphasis is that public transport improvements should focus on providing fast, reliable connections from Underground and rail stations into the area, primarily by local bus routes.

LB Hillingdon Local Plan Part 1 (LBH, 2012)

2.4.65 Part 1 of the Hillingdon Local Plan was adopted in November 2012 and contains strategic policies and objectives for the borough. Hillingdon Local Plan Part 1 - Strategic Policies was formerly known as the Core Strategy.

2.4.66 The document sets out the vision, strategic objectives, spatial strategy and policies for the spatial development of the borough over the next 15 years.

2.4.67 Taking account of the priorities in the Sustainable Community Strategy, the Local Plan Part One has a seven-point vision, starting from an overall vision of what the Strategy is trying to achieve. The vision forms the basis of a series of strategic objectives which are the stepping stones, which provide the overarching framework for more detailed policies.

2.4.68 The following elements of the vision, strategic objectives and policies are particularly relevant to this TA :

- Vision: improved environment and infrastructure is supporting healthier living and helping the borough to mitigate and adapt to climate change;
- Vision: improved accessibility to local jobs, housing and facilities is improving the quality of life of residents;
- Vision: Hillingdon has a reliable network of north/south public transport routes and improved public transport interchanges;
- Strategic Objective SO11: address impacts of climate change; minimise emissions of carbon and air quality pollutants from transport;
- Strategic Objective SO12: reduce reliance on car use by promoting safe and sustainable transport;
- Strategic Objective SO18: improve access to local services and facilities, especially for those without a car through well planned routes and integrated public transport;
- Strategic Objective SO20: improve facilities at public transport interchanges to promote sustainable growth and accessibility to town centres;

- Strategic Objective SO21: improve public transport services between the north and the south of the borough;
- Strategic Objective SO22: promote efficient use of public transport, enhance Underground services to Uxbridge and faster services to central London
- Policy EM1: promote a modal shift away from car use; new development to reduce car dependency;
- Policy E4 and T2: improve public transport interchanges to encourage shorter journeys to be completed on foot or by cycle;
- Policy E5: public transport would be improved to strengthen the viability and vitality of all town centres;
- Policy T3: improve north-south public transport links in the borough and link residential areas directly with employment areas and transport interchanges; and
- Policy T4: support sustainable operation of Heathrow. Support growth by improving public transport and cycle links, enhancing interchange to encourage modal shift including from short haul air to more sustainable transport.

LB Hillingdon's Local Implementation Plan 2011-2014

2.4.69 Hillingdon's LIP sets out how the Council proposes to implement the MTS and provides details on projects, proposals and programmes through to 2014. The LIP was adopted in April 2011. The key objectives outlined within the LIP document include:

- improve condition of principal roads and increase satisfaction levels with network condition;
- reduce the negative impacts of transport on air quality and noise;
- promote healthy travel behaviour;
- improve the safety and security of the transport system, including reducing the number of collisions;
- ensure the transport system enables sustainable access to health, education, employment, leisure and social opportunities;
- reduce Hillingdon's transport contribution to climate change and improve its resilience; and
- improve journey time reliability and reduce congestion.

2.5 Country regional and local policy and guidance

2.5.1 From 2011, with the restructuring of the DfT the Regional and Local Transport (RLT) programme no longer exists.

- 2.5.2 However, the Department for Environment, Food and Rural Affairs (Defra) highlights the important part that transport plays in rural life, recognising that effective and integrated rural transport services contributes greatly to rural economic growth and the sustainability of local communities and services, consistent with the DfT's guidance on the conduct of transport studies and specifically key objectives relating to accessibility and integration (Defra Rural Strategy, 2004).
- 2.5.3 To this end, Defra is working across government to ensure departments recognise and understand the transport needs of rural communities and that they are considered and reflected in the development and implementation of their programmes, policies and funding allocations.

Country local transport policy

- 2.5.4 A Local Policy review has been undertaken of current transport-related local government policy relevant to the Proposed Scheme. This includes strategies and action plans. At the County and Unitary level, key documents are the Local Transport Plans (LTPs). At District and Unitary level, the Core Strategy is also relevant.
- 2.5.5 The LTP helps each local authority work with its stakeholders to strengthen its place-shaping role and its delivery of services to the community. The first and second round of LTPs covered the five-year periods 2001–06 and 2006–11. New statutory Guidance on LTPs in 2009 provided a framework for local transport authorities (LTAs) in England and outside of London in producing LTPs under the Transport Act 2000, as amended by the Local Transport Act 2008.
- 2.5.6 County Councils, Unitary authorities and District Councils directly affected by the proposed route of HS2 are summarised in Table 2.1 below.

Table 2.1: Local transport and planning authorities in country section affected by HS2

County/Unitary	District
Buckinghamshire	South Buckinghamshire
	Aylesbury Vale
	Chilterns
	Wycombe
Hertfordshire	Three Rivers
Oxfordshire	Cherwell
Northamptonshire	South Northamptonshire
Warwickshire	Stratford upon Avon
	Warwick
	North Warwickshire
Staffordshire	Lichfield
Coventry	

Buckinghamshire

- 2.5.7 The LTP₃ (2011) for Buckinghamshire sets out the County Council's transport policies and strategies to 2016 that would be delivered by Transport for Buckinghamshire (TfB).
- 2.5.8 Buckinghamshire's anticipated high levels of house building and economic growth over the forthcoming years could have a significant adverse impact on the county's transport network. This increase in pressure would be felt on both the road and public transport network.

Local Transport Plan - Connecting People and Places (Buckinghamshire CC, 2011)

- 2.5.9 The third LTP sets out the County Council's (Buckinghamshire CC) transport policies and strategies for the next five years (2011/12 - 2015/16). The Transport Vision is to "Make Buckinghamshire a more successful, healthy and safe place to live, work and visit. Maintaining and enhancing the excellent environment, whilst ensuring that businesses thrive and grow the county's economy."
- 2.5.10 The LTP vision aligns with the Buckinghamshire Sustainable Communities Strategy (SCS) which sets the overarching long-term plan for the county up to 2026.
- 2.5.11 The LTP Implementation Plan³ (Feb 2011) refers to the HS2 preferred route passing through Buckinghamshire and having a profound impact on the county. Buckinghamshire CC is one of 13 local authorities along the Proposed Scheme route have come together to oppose the current proposals
- 2.5.12 The LTP objectives and strategy are framed around the SCS Corporate Plan themes.

Table 2.2: Buckinghamshire transport objectives

SCS Themes	Relevant LTP Objectives
Thriving Economy	<p>Maintain or improve the reliability of journey times on key routes</p> <p>Improve connectivity and access between key centres.</p> <p>Deliver transport improvements to support and facilitate regeneration and sustainable housing and employment growth.</p> <p>Ensure local transport networks are resilient and adaptable to shocks and impacts.</p>
Sustainable Environment	<p>Reduce the need to travel.</p> <p>Increase the proportion of people travelling by low emission modes of transport: including by behaviour change initiatives.</p> <p>Protect, improve and maintain the local environment: ensuring negative impacts of the transport network on people and environment are reduced.</p> <p>Reduce carbon emissions and waste associated with transport authority operations.</p>
Safe Communities	<p>Reduce the risk of death or injury on the county's highways.</p>

³ http://www.tfbucks.co.uk/documents/ltp/LTP3_Implementation_Plan.pdf

	Reduce crime, fear of crime and anti-social behaviour on the transport network.
Health & Wellbeing	<p>Improve health by encouraging walking and cycling</p> <p>Reduce the negative impact of poor air quality</p>
Cohesive & Strong Communities	<p>Enable disadvantaged people to access employment sites & opportunities, key services and facilities</p> <p>Encourage and support the delivery and planning of local transport services by local groups, communities and individuals.</p>

South Bucks Core Strategy (2011)

- 2.5.13 The 2011 Core Strategy for South Bucks was adopted in February 2011. It is based upon four key visions: Community Needs; Living Environment; Maintaining Local Economic Prosperity; and Climate Change and Environmental Management.
- 2.5.14 These visions are made up of 11 key objectives, which are the basis for the policies in the Strategy. The objectives relating to travel are:
- protect existing physical, social and green infrastructure and to improve infrastructure when in is needed;
 - focus new development in accessible locations, reducing the need to travel and increasing the opportunities for walking cycling and the use of public transport;
 - encourage more sustainable forms of transport and increase travel choice; and
 - address traffic congestion and mitigate the amenity impacts of HGV's.
- 2.5.15 Core Policy 7 states: that the council will be “supporting the greater use of rail services,” as well as “supporting public transport schemes, including Crossrail, as long as there are strong environmental safeguards in place.”
- 2.5.16 It also states that “sustainable transport also has an important role to play in tackling climate change and in influencing air pollution levels”.

Chilterns Core Strategy (2011)

- 2.5.17 The Chilterns Core Strategy was adopted in November 2011 and is based around 16 main objectives. Those relating to transport include:
- managing road congestion and maintaining the transport network;
 - improving public and community transport; and
 - enhancing sustainable access to goods and services particularly in rural areas.
- 2.5.18 Section 4.4.e states that “many smaller settlements are poorly served by local services and facilities, which means there is a need for people to travel to access them”. Due to this and the large number of commuters, it is putting pressure on the transport network in the area.

- 2.5.19 Section 15.1 of the report also notes that the area is particularly attractive to commuters to London due to rail fares being “significantly less than comparable suburban line stations a similar distance from London” due to the presence of the London Underground in the district.

Wycombe Core Strategy (2008)

- 2.5.20 The Wycombe Core Strategy is based around nine main objectives. The objective relating to travel is to provide better and more sustainable travel by bus, rail, walking and cycling.
- 2.5.21 It also indicates the need to “establish Handy Cross as a gateway to the town [High Wycombe], including a new regional coachway” and CS16.2.c highlights the need to “identify and safeguard from development future routes for public transport, walking and cycling, and road improvement lines”.

Hertfordshire

Local Transport Plan 3 (Hertfordshire County Council, 2011)

- 2.5.22 The third Hertfordshire LTP sets out the Hertfordshire County Council’s (HCC) vision and strategy for the long term development of transport over the period 2011 to 2031. The LTP3 provides a framework, not only for HCC, but for all who are engaged in the development of Hertfordshire and the provision and use of the transport network. The Hertfordshire LTP vision is “to provide a safe, efficient and resilient transport system that serves the needs of business and residents across Hertfordshire and minimises its impact on the environment.”
- 2.5.23 The transport strategy is supported by five goals and 13 challenges, which are in full alignment with the Sustainable Community Strategy and HCC’s Corporate Plan 2009/12. The goals are to:
- support economic development and planned dwelling growth;
 - improve transport opportunities for all and achieve behavioural change in mode choice;
 - enhance quality of life, health and the natural, built and historic environment for all Hertfordshire residents; and
 - reduce transport’s contribution to greenhouse gas emissions and improve its resilience.
- 2.5.24 The most relevant challenges to improving public transport are in Table 2.3 below.

Table 2.3: Hertfordshire’s LTP3 goals and public transport challenges

Goals	Relevant Public Transport Challenges
Support economic development and planned dwelling growth	Challenge 1.1: Keep the county moving Challenge 1.2: Support economic development and planned dwelling growth
Improve transport opportunities for all and achieve behavioural	Challenge 2.2: Achieve behavioural change as regards choice of

Goals	Relevant Public Transport Challenges
change	transport mode Challenge 2.3: Achieve further improvements in the provision of passenger transport (bus and rail)
Enhance the quality of life, health and the natural, built and historic environment of all Hertfordshire residents	Challenge 3.1: Improve journey experience for transport users
Improve the safety and security of residents and other road users	
Improve transport opportunities for all and achieve behavioural change	

- 2.5.25 Policy 3.16 includes passenger transport with “the promotion and support of passenger transport...an essential part of the County’s transport policies as it looks to reduce dependency on the car and increase the use of sustainable modes”. HCC also promotes and supports passenger transport across the County to provide access to important services and to encourage increased use of modes of travel other than by car.
- 2.5.26 The LTP3 acknowledges impact of bus and rail upon:
- providing modal choice and reducing the need to travel by car;
 - maintaining levels of economic growth and employment;
 - supporting the local economy and the viability of town centres;
 - access to services and facilities; and
 - improving the sustainable use of resources and air quality.
- 2.5.27 In order to support rail operations HCC will:
- work with the rail industry to seek improvements to train services and station facilities for Hertfordshire residents and visitors;
 - work with the train operating companies to establish quality rail partnerships; and
 - support Community Rail partnerships in the County.
- Three Rivers Core Strategy (2011)**
- 2.5.28 The Three Rivers Core Strategy was adopted in October 2011. It is made up of 12 strategic objectives. The objective relating to transport affirms “to deliver improved and more integrated transport systems and reduce the need to travel by locating development in accessible locations”.
- 2.5.29 Paragraph S7 in Chapter 3 notes the “implementation of the Croxley Rail Link is supported” as providing a main alternative for the use of cars in the local area and that good integration between transport networks is necessary for ease of use.

- 2.5.30 CP10 in Chapter 5 also suggests that a movement of some road freight to rail and canal would also be supported. CP10 indicates the consideration of a street hierarchy for new major developments of pedestrians, cyclists, public transport and then other motor vehicles, as well as the need to improve links to public transport.

Oxfordshire

Local Transport Plan (Oxfordshire County Council, 2011)

- 2.5.31 Oxfordshire's third LTP sets out the County's transport policy and strategy for the next 20 years. The amended document was adopted as policy by Oxfordshire County Council (OCC) in July 2012 and includes specific reference to rail policy, including HS2. The Plan focuses on attracting and supporting economic investment and growth, delivering transport infrastructure, tackling congestion and improving quality of life. It supports the Oxfordshire Sustainable Community Strategy, Oxfordshire 2030, responding to the strategic objectives of the economy, community, climate change and reducing deprivation.
- 2.5.32 Oxfordshire 2030 sets out a long term vision for Oxfordshire: The strategy's ambitions are to:
- create a world class economy for Oxfordshire;
 - have healthy and thriving communities;
 - look after the County's environment; and
 - break the cycle of deprivation by addressing the regeneration needs of disadvantaged communities,
- 2.5.33 The LTP3 has developed a set of nine objectives for transport to 2030, which are supported by a number of policies. The most relevant of these are listed in Table 2.4.

Table 2.4: Oxfordshire transport objectives

Objectives	Relevant Policies
General	<p>Policy G2: a higher priority to expenditure on maintaining existing transport assets than to improvements to the network</p> <p>Policy G3: meet the needs of the county's world class economy, whilst protecting the environment and amenity</p> <p>Policy G4: prioritise external funding to deliver improvements to the transport network to develop access to Oxford from other regions</p> <p>Policy G5: support sustainable, healthy and inclusive travel modes and promote changes in travel behaviour</p>
Objective 2: To reduce congestion	<p>Policy TC1: reduce congestion and minimise disruption and delays to the travelling public</p> <p>Policy TC2: enable sustainable travel for journeys to employment, health, shopping and education</p> <p>Policy TC5: identify suitable and unsuitable routes for freight movement</p>
Objective 3: To reduce casualties and the dangers associated with	<p>Policy RS: reduce road accident casualties, focusing on high risk locations and groups</p>

Objectives	Relevant Policies
travel	
Objective 4: To improve accessibility to work, education and services	Policy AX2: identify how access by public transport to employment and services can be improved
Objective 6: To reduce carbon emissions from transport	Policy CBR1: promote sustainable travel for journeys to work, education, health and other facilities Policy CBR2: promote low carbon forms of transport and infrastructure. Policy CBR3: reduce the carbon footprint of the transport network
Objective 7: To improve air quality, reduce other environmental impacts and enhance the street environment	Policy RE1: reduce environmental impacts of the transport network and promote use of less damaging transport forms, particularly in Areas of Outstanding Natural Beauty and Conservation Areas Policy RE2: ensure that transport network operation balances the protection of the local environment with efficient access for freight and distribution
Objective 8: To develop and increase the use of high quality, welcoming public transport	Policy PT3: support high quality public transport interchanges and infrastructure where appropriate Policy PT4: support strategic enhancement of the rail network where rights of way, cultural heritage or natural environment impacts are not unacceptable Policy PT5: deliver new or improved stations, new rail services and greater integration of rail and buses Policy PT6: only support the Proposed Scheme if the local economic benefits outweigh the environmental impact on the county Policy PT7: support Quality Bus and Rail Partnerships, where appropriate
Objective 9: To develop and increase cycling and walking for local journeys, recreation and health	Policy CW1: encourage greater levels of walking and cycling Policy CW4: protect and maintain public rights of way and natural areas

2.5.34 Under Objective 8, Policy PT6 states that OCC would only support the Proposed Scheme rail proposals if their local economic benefits outweigh the environmental impact on the County.

2.5.35 The Oxfordshire Local Investment Plan, prepared by a partnership of the County and District Councils, identifies a number of strategic transport schemes which it considered necessary to support development in the county. Of specific relevance to the Proposed Scheme are the East-West Rail and Evergreen Three Rail projects, and the potential implications of schemes in towns of relative proximity namely Bicester and Banbury.

Cherwell Local Plan (2012)

2.5.36 The Cherwell Local Plan was published in August 2012 and following its formal adoption will form part of the main set of policies relating to development within the District. The policies outlined within the Local Plan which are relevant to this proposal are outlined below:

- Policy SLE5 - the design and construction of the High Speed 2 Rail Link must minimise adverse impacts on the environment, the local economy and local

communities and maximise any benefits that arise from the proposal;

- Policy SO6 - to provide sufficient accessible, good quality services, facilities and infrastructure including green infrastructure, to meet health, education, transport, open space, sport, recreation, cultural, social and other community needs, reducing social exclusion and poverty, addressing inequalities in health, and maximising well-being;
- Policy SO13 - to reduce the dependency on the private car as a mode of travel, increase the attraction of and opportunities for travelling by public transport, cycle and on foot, and to ensure high standards of accessibility for people with impaired mobility;
- Policy SLE4 - the Council will support key transport links as identified in the Local Transport Plan and the Local Plan to deliver key connections, to support modal shift and to support more sustainable locations for employment and housing growth; and
- Policy ESD1 - measures will be taken to mitigate the impact of development within the district on climate change.

Northamptonshire

Northamptonshire Transportation Plan – Fit for Purpose (Northamptonshire Council, 2012)

- 2.5.37 The Northamptonshire Transportation Plan (NTP) that replaces the interim LTP3 produced in 2011 sets out the strategic aims and goals, as well as plans and policies for transport in Northamptonshire, including their implementation.
- 2.5.38 The Plan is supported by 'daughter' documents that would cover a range of strategies. In particular, The Northamptonshire Arc (NCC, 2011) ties together all of the projects across the County for consistency and is a supporting document for the whole of Northamptonshire.
- 2.5.39 The Northamptonshire Arc represents an integrated approach to economic development, the environment and connectivity; providing the strategic context for future plans and investment in areas such as planning, economic development and transport. The document is underpinned by three high level outcomes:
- transformed connectivity;
 - a naturally resilient and low carbon Northamptonshire; and
 - a stronger and greener economy.
- 2.5.40 These outcomes are further supported in the Northamptonshire Arc by 10 long-term priorities that inform the development of the NTP. The most relevant are:
- enhancing strategic connections and addressing congestion on the road network;

- rail - better rail services are required to deliver real economy benefits:
 - improved services on the WCML could provide faster and more frequent services and attract additional investment and businesses; and
 - Midland Main Line (MML) upgrades could also improve service connections across London, the South East and via Eurostar to Europe, reduce pollution and enable more reliable and faster journey times.
- freight - the logistics and distribution sector is essential to the economy and has a big impact on the environment. The ability to move freight by rail is crucial and its importance would grow with the need to reduce congestion and lower carbon emissions. Northamptonshire's central location is ideally based to capitalise;
- making public transport and cycling more attractive and encouraging low-carbon travel; and
- a mass-transit alternative is needed to help meet traffic demand and manage its impact on the transport network. Without this it is unlikely that high economic growth and prosperity can be sustained:
 - mass transit links would help improve internal connectivity and improve access to transport hubs and the strategic network; and
 - the ambition is to provide an attractive, practical, affordable and low carbon alternative to the private car for urban travel and inter-urban journeys.

2.5.41 The overarching aim for the NTP is 'Northamptonshire Transportation - Fit for Purpose.' This vision is supported by six objectives, reflecting wider national and local policy context, which are supported by 24 strategic policies. Table 2.5 summarises the most relevant Transport Objectives and Strategic Policies to this study.

Table 2.5: Northamptonshire transport objectives

Transport Objectives	Relevant Strategic Policy
1. Fit for.....the Future – creating a transport system that supports and encourages growth and plans for the future impacts of growth, whilst successfully providing benefits for the County	Strategic Policy 2: Introduce effective and attractive sustainable transport options to encourage lasting modal shift
2. Fit for.....the Community – through the transport system help to maintain and create safe, successful, strong, cohesive and sustainable communities where people are actively involved in shaping the places where they live	Strategic Policy 12: Identify road safety initiatives that would aim to reduce casualties
3. Fit to.....Choice – ensuring that the people of Northamptonshire have the information and the options available to them to be able to choose the best form of transport for each journey that they make	Strategic Policy 14: Improve walking, cycling and public transport infrastructure to improve options for travel
	Strategic Policy 15: Improve accessibility to employment and services including those with access to a limited range of transport modes
4. Fit for.....Economic Growth – creating a transport system that supports economic growth, regeneration and a thriving local economy and successfully provides for population and business	Strategic Policy 18: Improve the highway infrastructure and transport network to provide better access to jobs and training
	Strategic Policy 19: Improve journey times and reliability on

Transport Objectives	Relevant Strategic Policy
growth	highway and rail networks to increase freight movement efficiency and grow the local economy
5. Fit for.....the Environment – to deliver a transport system that minimises and wherever possible reduces the effect of travel on the built, natural and historic environment.	Strategic Policy 21: Reduce transport-related carbon emissions by making low carbon transport modes more attractive and increasing efficiency on the rail network
	Strategic Policy 22: Reduce the impact of vehicles on the local environment by minimising severance, noise and emissions from transport
	Strategic Policy 23: Develop an Air Quality Strategy
	Strategic Policy 24: Increase accessibility for all community
	Strategic Policy 25: Avoid / minimise harmful effects on the natural and historic environment
6. Fit for.....Best Value – being clear about our priorities for investment and focusing on value for money and how it can be beneficial for the county as a whole and search for alternative sources of funding	Strategic Policy 26: We would ensure that our services are delivered in the most cost-effective way and offer value for money.

- 2.5.42 The majority of schemes envisaged in the NTP are localised improvements to the public realm and junctions within Northampton.
- 2.5.43 Key highways arteries for investment highlighted in the Northamptonshire Arc include the A14, the A43 and A45 corridors. Specific focus in the implementation plan is provided for the A43 Corby Link Road.
- 2.5.44 With respect to HS2, at its Full Council meeting on 23rd June 2011 NCC agreed:
- "that this Council confirms its support for the principle of High Speed Rail in Britain, but only if a clear, professionally certified business case is made for the value for money of the investment needed, which significantly outweighs the advantages for the same investment which could otherwise be made into the existing transportation infrastructure of the county";
 - "that the Council, recognising that the advent of high speed services is probably 15 years away for the WCML and 30 years away for cities served by the MML, urges that improvements sought in the nearer future to existing infrastructure and services should be given a high priority so that capacity and service enhancement is achieved in the interim and is available for conventional services if the high speed service comes on stream'; and
 - the County Council would be working with HS2 Ltd and local communities to ensure that appropriate mitigation measures are included in the designs for the sections of route within Northamptonshire; and pressing for improved services on the WCML and MML, both before and after the opening of the two phases of HS2.

South Northants Transport Strategy (2010)

- 2.5.45 The Council for South Northamptonshire published a Transport Strategy in 2010 which aims to influence the provision of transport across the District. The proposals set out are aimed to improve and sustain transport and ensure future growth of the district has sufficient transport provision.
- 2.5.46 The key themes of the document revolve around improving, sustaining and growing the transport network within the district, with the two objectives identified by the council to:
- improve the sustainable transport choices for residents, businesses and services by enabling them to use their car less often; and
 - seek ways to reduce the need to travel by thinking creatively about ways to bring people, places and services closer together.
- 2.5.47 In relation to the proposed HS2 development, a number of mitigation factors have been identified as part of the document. These include:
- use of existing transport corridors;
 - avoiding built development;
 - minimise environmental damage;
 - avoid long embankments;
 - minimise visual and noise intrusion;
 - maximise noise attenuation;
 - regard to existing settlements;
 - special consideration to overnight noise intrusion;
 - noise protection suppression at source;
 - design for operating speeds which permit commuter use;
 - fair and comprehensive compensation;
 - road/path reinstatement; and
 - reinstatement of agricultural land.

Warwickshire

Warwickshire Local Transport Plan (2011-2026)

- 2.5.48 Warwickshire LTP is the third LTP produced for Warwickshire. It sets out the transport strategy and policies for the County from 2011 to 2026. The objectives of the LTP3 include:
- to promote greater equality of opportunity for all citizens in order to promote a fairer, more inclusive society;

- to seek reliable and efficient transport networks which will help promote full employment and a strong, sustainable local and sub-regional economy;
- to reduce the impact of transport on people and the 'built and natural' environment and improve the journey experience of transport users;
- to improve the safety, security and health of people by reducing the risk of death, injury or illness arising from transport, and by promoting travel modes that are beneficial to health;
- to encourage integration of transport, both in terms of policy planning and the physical interchange of modes; and
- to reduce transport emissions of carbon dioxide and other greenhouse gases, and address the need to adapt to climate change.

2.5.49 Chapter 27 of the LTP3 relates to Warwickshire's Public Transport Strategy (PTS). It provides the strategic framework for the public transport mode specific strategies covering Buses, Passenger Rail, Community Transport, Taxis and Private Hire Vehicles. The PTS Introduction and Overview describes the purpose of the strategy as follows "to set out what is needed in Warwickshire to ensure excellent public transport services and facilities which will address the needs of both current and potential passengers in Warwickshire and deliver the transport objectives of the Government and the County Council".

2.5.50 Chapter 29 of the LTP relates to the Passenger Rail Strategy. The passenger rail network in Warwickshire is described as being focused on the London to Birmingham axis with routes between the two cities serving stations in the County. It is stated that the overall trend in the numbers of rail passengers in Warwickshire is one of sustained growth with rail travel becoming increasingly important.

2.5.51 The vision of Warwickshire County Council's (WCC) Passenger Rail Strategy is to have "an affordable, accessible, safe, convenient, environmentally friendly and integrated network of rail services, capable of attracting an increasing market share for rail thereby contributing to the achievement of the objectives in the Warwickshire's LTP 2011".

2.5.52 The Passenger Rail Strategy will contribute to achieving the objectives in the LTP by promoting a passenger rail network, which:

- "offers accessibility through the public transport system, both in terms of physical access to transport and its availability, to the widest cross section of the population";
- "gives people (including those who do not have access to cars) more travel choices to access work, services and leisure activities";
- offers affordable fares to passengers;
- provides an attractive and sustainable travel alternative to the car thereby helping to reduce traffic congestion and pollution levels and improving air

quality and the environment; and

- encourage integration with other modes of transport.

2.5.53 The LTP sets out seven policies to deliver the Rail Passenger Objectives such as Policy PTPR5 which states that “WCC will develop proposals for new rail services and stations to increase the accessibility of the rail network to existing and potential passengers” and Policy PTPR6 which states that “WCC will develop proposals for a ‘step change’ in the quality of public transport on key corridors. Heavy rail and light rail will be considered together with other public transport options”.

2.5.54 In terms of Public Rights of Way (PRoW) and protecting the existing assets from adverse impact of developments, the LTP sets out specific objectives for PRoW as follows:

- “to seek out improvements to the path network to compensate for the adverse effects of development on the network”; and
- “to increase the awareness of rights of way amongst other professionals so as to ensure that the recreational highway network is properly protected”.

2.5.55 It is stated in Policy RW5e for roads and railways, PRoW and recreational highways, “only substitutes the County Council will normally accept for an at-grade railway crossing (as part of a rail crossing diversion order) is an overbridge or underpass. Where it is proposed to construct new railway lines or re-open closed railway lines, at-grade crossings will not normally be acceptable” and that “any new roads or railways shall not sever the existing rights of way and recreational highway network unless reasonable alternative provision is made”.

2.5.56 WCC is opposed to HS2, with their position summarised by a Full Council resolution dated 14 December 2010: “that, as there can be no environmental or economic benefits for Warwickshire, this Council opposes the proposed High Speed Rail 2 Scheme”.

2.5.57 Since then, WCC has engaged in developing mitigation standards for submission to HS2 Ltd and DfT. WCC is also a member of 51M, an alliance of local authorities opposed to HS2, as currently proposed and are actively challenging HS2.

Stratford-on-Avon District Draft Core Strategy (2012)

2.5.58 The Stratford-on-Avon District Draft Core Strategy was published in February 2012 and, following formal adoption, will form a planning framework for the District.

2.5.59 The eight key objectives of the Draft Core Strategy concerns planning to increase the use of sustainable transport, as well as supporting the main commercial centres, meeting challenges of climate change, promoting and diversifying the local economy and meeting the need for improved infrastructure, community facilities and services.

- 2.5.60 Policy CS28 relates to transport and communication, setting out policies relating in particular to:
- transport strategy;
 - transport and new development;
 - parking standards; and
 - strategic transport schemes.
- 2.5.61 The transport strategy policies indicate that development proposals must be consistent with and contribute to the implementation of the agreed transport strategies and priorities set out in the Warwickshire LTP3, including its area strategies.
- 2.5.62 The policies concerning transport for new development indicate that development will only be permitted if the necessary mitigation is provided against any unacceptable transport impacts which may arise from that development or cumulatively with other proposals.
- 2.5.63 Policies relating to parking standards state that a development should not have excessive on-site parking, having regard to the parking standards applied by the District Council at the time, but provision will need to be sufficient in relation to an individual scheme to avoid unacceptable impact on the amenity of the local area or highway safety.
- 2.5.64 Strategic transport schemes identified as part of Policy CS28 include upgrading the Shakespeare Line to provide a semi-fast train service between Birmingham and Stratford-upon-Avon, reopening the railway line southwards from Stratford railway station to Honeybourne junction and providing a Parkway railway station in the vicinity of M42 Junction 3.

Warwick Local Plan Revised Development Strategy, Consultation Draft (June 2013)

- 2.5.65 The Council is currently in the process of preparing a new Local Plan for the District, for which consultation closed in July 2013. This will build upon the Council's Corporate Development Strategy "the Strategy for the Future and Sustainable Prosperity of Warwick District" and replace the 2006 Local Plan. However, until the new Local Plan is adopted the 2006 Local Plan remains in force.

The Strategy for the Future and Sustainable Prosperity of Warwick District (2011)

- 2.5.66 In December 2011, the Council agreed its Corporate Development Strategy “the Strategy for the Future and Sustainable Prosperity of Warwick District”, which is incorporated in the consultation version of the Revised Development Strategy. This sets out some key principles for the future development of the area. In overall terms the strategy seeks to ensure that by the end of the Plan period, the District will be known as a place of sustainable “Garden Towns, Suburbs and Villages” with a successful, dynamic broad based economy, catering for the needs of its growing and diverse communities.
- 2.5.67 In particular the strategy seeks to:
- facilitate the growth of the local economy;
 - provide for the growth of, and changes within, the local population;
 - provide for the appropriate and necessary transport, public service, green and other infrastructure; and
 - provide the basis for strong management of local development requiring:
 - low carbon environmental sustainability;
 - care for built, cultural and natural heritage;
 - regeneration of areas in need of improvement;
 - protection of areas of special significance; and
 - high quality design.
- 2.5.68 An emphasis on transport infrastructure is highlighted by the objective of “developing an effective and sustainable transport package”.
- 2.5.69 It also sets out the sustainable transport improvements that should form part of the mitigation package to support the housing and employment growth proposals within the District. Such improvements will:
- contribute towards the delivery of sustainable development;
 - maximise the number of journeys made by sustainable transport modes from trips generated as a result of new development;
 - reduce the impact of car based travel on the local and strategic highway network; and
 - deliver an integrated approach to transport provision to serve new development.

Warwick District Local Plan (2006)

- 2.5.70 Warwick District Local Plan remains the land use plan for Warwick until a new plan is adopted, controlling the location and nature of new development within the District. The objective of the Local Plan is for “Warwick District to be safe, healthy, fair and prosperous, now and into the future”.
- 2.5.71 Chapter 4 of the Local Plan sets out 14 development policies. It is stated that the policies are generic and apply to all development proposals including new development, extensions/alterations and changes of use. These policies seek to:
- contribute towards the achievement of the Core Strategy, specifically in relation to the Environmental and Social Objectives;
 - assist with the understanding of issues that need to be considered when looking at development proposals; and
 - ensure that applicants are clear what information they will be expected to provide when submitting development proposals to the Council.
- 2.5.72 Policy DP6 Access states “development will only be permitted which provides safe, convenient and attractive access routes for pedestrians, cyclists, public transport users and other users of motor vehicles, as appropriate”. Development proposals will be expected to demonstrate that they:
- do not cause harm to highway safety;
 - are designed to give priority access to, and allow penetration by, pedestrians, cyclists and public transport services, as appropriate; and
 - integrate the access routes into the overall development”.
- 2.5.73 Section 10 of the Local Plan sets out Site Specific Policies to ensure relevant objectives within the Core Strategy are achieved.
- 2.5.74 WCC is committed to pursuing the provision of a new station on the Leamington Spa to Coventry rail line to serve Kenilworth North. SSP₄ (safeguarding land for Kenilworth railway station) states that “other development will not be permitted on the above land if it would be likely to prejudice the implementation of the scheme”.
- 2.5.75 It is stated that the provision of a rail station for Kenilworth will increase the travel choices available to people when travelling to and from the town, which will provide significant economic, social and environmental benefits and will also contribute towards reducing the reliance on the private car and promoting social inclusion.
- 2.5.76 Although the Proposed Scheme will not directly impact on the proposed land for the new railway station, the Proposed Scheme would intersect with the railway section between Leamington Spa and Coventry railway line.

North Warwickshire Core Strategy (2013)

- 2.5.77 North Warwickshire Core Strategy submission version was published in February 2013 and forms part of the Local Plan for North Warwickshire and is due to be formally adopted once final amendments have been incorporated. It contains vision and strategic objectives for the borough as well as core policies that will set the basis for directing its development for the next 20 years.
- 2.5.78 The strategic objectives of the Core Strategy aim to:
- secure a sustainable pattern of development reflecting the rural character of the Borough;
 - provide for the housing needs of the Borough;
 - develop and grow the local economy for the benefit of local residents;
 - maintain and improve the vitality of the Market Towns;
 - promote rural diversification;
 - deliver high quality developments based on sustainable and inclusive designs;
 - protect and enhance the quality of the natural and historic environment across the borough;
 - establish and maintain a network of accessible good quality green infrastructure, open spaces, sports and recreational facilities; and
 - ensure the satisfactory provision of social and cultural facilities.
- 2.5.79 Policy NW18 directly relates to the HS2 development proposals, stating “opportunities for securing transport routes and other improvements will be sought, particularly through the A5 Strategy and the re-use of redundant railway lines/corridors where appropriate. The traffic implications and impact of growth in adjoining area and from development related to High Speed rail will need to be addressed and mitigated through encouraging sustainable transport solutions and measures, including traffic calming and access constraints on the rural road network”.
- 2.5.80 Furthermore the Core Strategy document retains a number of policies set out in the Local Plan, published in 2006. Policies retained and directly relevant to the proposed development include:
- TPT1 - transport considerations in new development;
 - TPT2 - traffic management and travel safety;
 - TPT3 - access and sustainable travel and transport; and
 - TPT4 - public transport improvements and new facilities.

Coventry

Coventry City Council Core Strategy Submission Draft (CCC, 2012)

- 2.5.81 The Coventry Core Strategy Submission Draft was published in July 2012 and is currently undergoing a consultation process prior to being formally adopted. The Core Strategy delivers the spatial aspects of the City's Sustainable Community Strategy and of other relevant strategies. It is one of the documents that will form the Local Development Framework.
- 2.5.82 The prevailing vision of the Core Strategy is that Coventry is proud to be a city that works for jobs and growth, for better pavements, streets and roads, to support and celebrate young people and to protect the most vulnerable residents.
- 2.5.83 The key objectives of the Core Strategy include:
- a prosperous Coventry with a good choice of jobs and business opportunities for all City's residents;
 - people of Coventry living longer, healthier independent lives;
 - a safer and more confident Coventry;
 - making Coventry's streets, neighbourhoods, parks and open spaces attractive and enjoyable places to be and tackling climate change;
 - improve Coventry children and young people's education, health and wellbeing, protect them from harm, tackle inequality and support their families;
 - a good choice of housing to meet the needs and the aspirations of the people of Coventry;
 - making places and services easily accessible for Coventry people;
 - a creative, active and vibrant Coventry; and
 - a more equal Coventry with cohesive communities and neighbourhoods.
- 2.5.84 Policy OS1 within the Core Strategy maintains that all new developments will need to incorporate sustainable principles into their proposals, including improved quality of life, access, low carbon housing and waste management.
- 2.5.85 Policy Acc 1 additionally makes a case for an accessible transport network which encourages sustainable and active transport choices for local journeys with new developments making provisions for accessibility, transport integration and new technologies.
- 2.5.86 Policy Acc 2 (network capacity) emphasises that developments which result in significant negative impact on the transport network will be required to mitigate those through appropriate measures.

- 2.5.87 Policy Acc 3 sets out demand management requirements whereby travel plans, transport assessments, adherence to local parking standards and appropriate parking provision will be expected of new developments as part of their proposals.
- 2.5.88 Policy Acc 6 focuses on rail, stating "proposals which improve access to rail services will generally be supported. This includes:
- improved access to rail stations by all modes of travel;
 - improved interchange facilities between rail and other modes; and
 - enhancements which support improved frequency and the quality of rail services.
- 2.5.89 Enhanced direct rail services and supporting rail infrastructure on the North-South corridor from South Warwickshire through Leamington, Kenilworth, Coventry, Bedworth, Nuneaton and North on to Leicestershire and Leicester will be supported. Proposals which support improved rail access from Coventry to London and the south will be supported. Proposals for further local rail stations and services on the East-West rail corridor through Coventry will be supported".

Staffordshire

Staffordshire Local Transport Plan (Staffordshire County Council, 2011)

- 2.5.90 Staffordshire's (SCC) third LTP sets out the County Council's proposals for transport provision in the county, including walking, cycling, public transport, car-based travel and freight, together with the management and maintenance of local roads and footways.
- 2.5.91 The LTP3 states that the County is well connected to the national (and international) road and rail network, for example, the WCML runs north-south providing frequent connections to London, Birmingham, Manchester and Liverpool and the M6 motorway runs through the county, one of the major arterial roads running along the backbone of the UK.
- 2.5.92 Staffordshire, like many other areas, is expected to see considerable change in the future with the County's population projected to increase by 13% (to 932,700) by 2031 and the proportion of people aged over 65 years is projected to increase by 76% (104,700). LTP3 states that new services and infrastructure are likely to be needed to accommodate these changes.
- 2.5.93 The vision for transport provision in the county is "a transport system that supports Staffordshire's economy, and safely and conveniently connects people and services within Staffordshire and beyond; it provides opportunities for services and jobs to be accessed in a sustainable way, and makes sure that any adverse effect of transport on Staffordshire's rich environment and on residents' quality of life is minimised".

2.5.94 To achieve this vision, seven countywide objectives have been identified, with the three below identified as the principle ones:

- supporting growth and regeneration;
- maintaining the highway network; and
- making transport easier to use and places easier to get to.

2.5.95 Section 1 of the LTP3, (Supporting Growth and Regeneration), refers to the Proposed Scheme. Box 1.3 states “whilst some considerable time in the future and with no new station proposed in Staffordshire, HS2 is claimed to have potential medium to long-term benefits to the County’s economy. It is claimed that HS2 would free up capacity on the WCML, resulting in the opportunity to operate more frequent local rail services along the Trent Valley line through Tamworth and Lichfield to Stafford. On the other hand, there would undoubtedly be significant environmental impacts. At its meeting on 17th March 2011, the County Council resolved to oppose the HS2 proposals”.

2.5.96 SCC made its formal submission to Government on the Proposed Scheme consultation, which closed on 29th July 2011. The submission supports the Council’s decision of opposing the plans for the Proposed Scheme on the grounds that there would not be sufficient economic benefits, while having significant negative environmental impacts for local communities.

Lichfield District Local Plan: Strategy (2012)

2.5.97 The Lichfield District Local Plan establishes a long-term strategy to manage development, provide services, deliver infrastructure and create sustainable communities. The Strategy consists of a vision and strategic objectives, a spatial development strategy, core policies and development management policies and sets out how the strategy would be implemented and monitored.

2.5.98 In Policy Lichfield 5 (East of Lichfield - Streethay) stated that a development of 750 dwellings would be delivered by 2028. The development would need to ensure that the impacts of the WCML and the route of HS2 on the new development are taken into account and mitigated for accordingly. This is reiterated in the east of Lichfield concept statement.

2.5.99 In Policy Whit1 (Whittington Environment) it is stated that “the route of the high speed rail link, HS2, runs to the west of the village and measures would need to be supported which minimise the impacts of this upon the community and the environment”.

2.6 West Midlands regional and local transport policy and guidance

West Midlands regional transport policy

2.6.2 There is a particular West Midlands regional focus to HS2, including:

- providing a High Speed Rail link and additional rail capacity between the West

Midlands and London, together with access to Europe with a direct link between HS2 and HS1 and on to the Channel Tunnel; and

- aiming to support the rebalancing of the UK economy and economic growth in the West Midlands and support regeneration and creating jobs in the West Midlands.

- 2.6.3 Within the West Midlands there are a number of regional or sub-regional bodies with policies relevant to HS2 and this TA. The key authorities are Birmingham City Council (Birmingham CC) and Solihull Metropolitan Borough Council (SMBC) in relation to HS2. Coventry City Council (CCC) is also relevant but considered in the previous section (paragraphs 2.5.81 to 2.5.89).

West Midlands Regional Spatial Strategy (GOWM, 2008)

- 2.6.4 The West Midlands Regional Spatial Strategy (RSS) was the regional planning and transport planning policy document for the West Midlands, with a plan period to 2021.
- 2.6.5 However in line with Government Policy, regional planning policy no longer has a statutory role with the West Midlands RSS, including the West Midlands Regional Transport Strategy, having been revoked with effect from 20 May 2013 and the West Midlands Regional Assembly and the West Midlands Regional Development Agency (Advantage West Midlands) having been previously abolished.
- 2.6.6 Many of the West Midlands RSS policies, in terms of the regional economy, regional prosperity, regeneration, quality of the environment and transport and accessibility (including a range of transport schemes and measures), remain relevant to today and would be consistent with and supportive of HS2.

West Midlands Economic Strategy & Regional Transport Priorities (WMRA, 2007)

- 2.6.7 A Regional Economic Strategy and Regional Transport Priorities Action Plan were also produced for the West Midlands. The Regional Economic Strategy (published by Advantage West Midlands in 2007) set out an economic strategy for the West Midlands, where accessibility was considered fundamental to the economic success and wellbeing of the West Midlands Region. Although both documents predate the publication of Command Paper 7827 High Speed Rail and Command Paper 8247 High Speed Rail: Investing in Britain's Future - Decisions and Next Steps, many of the strategies, priorities and measures remain relevant to today and would be consistent with and supportive of HS2.

West Midlands Local Transport Plan (Centro, 2011)

- 2.6.8 The West Midlands LTP3 2011 - 2026, published in 2011, is the statutory transport planning policy document for the West Midlands Metropolitan County area, with a plan period to 2021 (published by Centro as the West Midlands Integrated Transport Authority and prepared by on behalf of the West Midlands Metropolitan District Local Authorities). It looks at the transport needs for the West Midlands Metropolitan County area and sets out transport policies, measures, programmes and schemes to meet these needs. The West Midlands LTP3 is made up of two basic parts: a Local Transport Strategy for the entire period 2011 - 2026 and a Local Transport Implementation Plan for 2011/12 - 2015/16 (identified as Phase One, together with a Phase Two outlining "Longer Term Transport Investments" required to deliver the Strategy for the period 2016/17 -2025/26).
- 2.6.9 The West Midlands LTP3 has a vision, supported by five main goals. From these themes, the West Midlands LTP3 Strategy sets five objectives, in terms of what the LTP is seeking to achieve. These objectives translate into ten 'long term themes' with policies and 'priorities for action', together with the Implementation Plan,
- 2.6.10 There are continuing references to High Speed Rail and HS2 throughout the West Midlands LTP3 and its value to the West Midlands Metropolitan County area. The West Midlands LTP is strongly supportive of HS2, with the following extracts from the long term themes, in particular:
- 'regeneration, thriving centres, corridors and gateways' (Theme 1); and
 - 'a rail and rapid transit network backbone for development' (Theme 5).
- 2.6.11 For Theme 1 - regeneration, thriving centres, corridors and gateways, there is a specific section dedicated to High Speed Rail:
- "High Speed Rail has a pivotal role in supporting the policy objectives of LTP3 and will contribute more to Birmingham and the Metropolitan Area than simply improved rail journey times. High Speed Rail will provide Birmingham and the Metropolitan Area with high capacity, fast and reliable connectivity across the UK. This connectivity will provide huge economic benefits to Birmingham allowing people to live and work in a greater range of places across the High Speed network within journey to work area increasing their access to employment opportunities.
 - At the same time, businesses will have access to a greater employment pool allowing them to recruit and grow, improve their own productivity as well as having access to national and international markets. HS2 is therefore expected to be highly attractive to businesses wishing to access the London economy as well as the major northern cities such as Manchester leading to inward significant investment into Birmingham and the Metropolitan Area. High Speed Rail therefore has an important role in delivering LTP3 Strategy objectives towards supporting economic growth; reducing carbon emissions and; reducing road congestion and is strongly supported by LTP3".

- 2.6.12 For Theme 5 - a rail and rapid transit network backbone for development covers rail issues in general, but includes a specific reference to HS2 including “to maximise accessibility to HS2 stations and a developing Airport/NEC, broadening the benefits to the whole of the Metropolitan Area”.
- 2.6.13 From these themes, there are specific policies around High Speed Rail:
- Policy REG2 High Speed Rail (from Theme 1):
 - “to work with Government and LTP3 Partners to maximise the benefits and opportunities High Speed Rail will bring to the Metropolitan Area, including maximising the benefits of released capacity on the ‘classic network’”;
 - together with the following supportive text:
 - “the economic, transport and environmental benefits of the proposed High Speed Rail network are well established and provide an opportunity to make a significant positive impact to Birmingham and the Metropolitan Area”;
 - “High Speed Rail is a transformational once-in-a-generation project that can make a significant change and improvements to the West Midlands’ connectivity with London and the South East, the Northern Cities, as well as a potential fast train link direct to European cities. This additional connectivity can also release capacity on the classic rail network, which will create additional benefits for capacity and connectivity enhancements. Centro will work with all partners to promote the West Midlands as part of a High Speed Rail network and ensure the benefits of it are realised for the Metropolitan Area”;
 - Policy REG3 High Speed Rail Sustainable Access (from Theme 1):
 - “to promote and deliver high quality sustainable access to High Speed Rail, ensuring that the resultant benefits and opportunities can be accessed by people and businesses across the entire Metropolitan Area”;
 - together with the following supportive text:
 - “maximising the benefits of High Speed Rail for the Metropolitan Area will be hindered if residents and businesses cannot easily access High Speed Rail stations and is not integrated into wider transport networks such as public transport nor is easily accessible by sustainable means principally walking. High quality High Speed Rail sustainable access cannot be delivered by one rail partner individually, and many authorities and operators have a role to play. Therefore Centro will work with Local Authorities, Network Rail, HS2 Ltd to deliver high levels of accessibility, which allows High Speed Rail to be inclusive and which is accessible to everyone by differing modes of transport”;
 - Policy RR1 - Expanding Rail Network Capacity (from Theme 5):
 - “to expand local rail network capacity to meet forecasted growth in patronage, delivering the schemes and objectives of the Regional Rail Development Plan. This will include maximising capacity of the ‘classic’ rail network derived from High Speed Rail”,

- together with the following supportive text:
 - “HS2 presents a major opportunity to deliver an expanded and enhanced rail network across the Area through the transfer of existing rail services off the existing network and on to High Speed services. This presents a significant opportunity for Centro and rail partners to deliver a step change in local rail services in terms of new services, reduced journey times and improved reliability. This released capacity will help meet forecasted long term demand up to 2026 and beyond. Centro will therefore work with rail industry partners to develop and implement schemes within the Metropolitan Area, including maximising released capacity derived from opening of HS2.”

2.6.14 The West Midlands LTP3 Strategy also identifies ‘priorities for action’, based around the themes, including those concerning HS2 and High Speed Rail:

- Long Term Theme 1- regeneration, thriving centres, corridors and gateways:
 - “active promotion of HS2, with stations at Birmingham Airport and Birmingham City Centre” and
 - “ensuring that the benefits of HS2 are maximised for the whole of the Metropolitan Area, and the wider region, through ensuring maximised connectivity within the local transport network and the best use of capacity released from the ‘classic’ rail network, including that capacity released on the West Coast Main Line”.
- Long Term Theme 5 - a rail and rapid transit network backbone for development:
 - “developing long term service aspirations towards the Metropolitan Area rail network through the use of classic network capacity released by High Speed Rail”.

2.6.15 The West Midlands LTP3 Strategy also addresses HS2 in the context of what it defines as transport challenges and issues for four defined sub-regions for the West Midlands , with specific references on High Speed Rail:

- Black Country - “ensuring that, through enhanced connectivity, the benefits of HS2 extend to the sub region”;
- Birmingham & Urban Solihull - “influencing and preparing for High Speed 2 to maximise benefits for the West Midlands”;
- The Rural Area (the area between Solihull and Coventry) - “accommodating the impact of High Speed Rail”; and
- Coventry - “to ensure that Coventry’s rail service provision benefits from the introduction of HS2”.

- 2.6.16 In the LTP3 Implementation Plan continues to reference HS2, with specific reference to “the commencement of High Speed Rail services will occur outside the scope of LTP3 Strategy, however due to the significant local, regional and national benefits and the long term development and planning associated with High Speed Rail, the Metropolitan Area will be working with DfT and rail industry partners to maximise the economic, transport and environmental benefits and opportunities High Speed Rail would bring to the Metropolitan Area”.

Centro

- 2.6.17 Centro (as the Integrated Transport Authority for the West Midlands Metropolitan County area) has published a range of policy documents, with Towards a World Class Integrated Transport Network; the Rail Development Strategy; and the West Midlands Metropolitan Freight Strategy particularly relevant to HS2.
- 2.6.18 Centro is supportive of HS2, working with Government and local partners to bring HS2 to the West Midlands. Centro’s position, in terms of policy and support, is particularly important to the development of HS2 in the West Midlands.

Centro: Towards a World Class Integrated Transport Network (Centro, 2013)

- 2.6.19 Towards a World Class Integrated Transport Network (published in April 2013 and with a 20-year plan period) is Centro’s prospectus for public transport in the West Midlands Metropolitan County area and the wider ‘journey to work’ area. It sets out a long term vision for the West Midlands Metropolitan area and a strategy to achieve the vision. Of particular relevance to HS2, it highlights:
- “the interaction of our transport network with High Speed Two - the need for effective use of released rail capacity and for new local connections to HS2 stations in the West Midlands, such as a link between Interchange station and Coventry, to maximise the economic benefits of HS2”;
 - “the increased emphasis on transport infrastructure boosting economic activity”;
 - “maximising the benefits of HS2 across the West Midlands, through effective local connections to stations and careful use of released rail capacity for regional and suburban rail services”;
 - “the West Midlands transport system needs to be integrated with regional, national and international connections, to enhance the existing accessibility of the West Midlands’ cities and towns. High Speed Rail Two will be at the heart of future national transport infrastructure”;
 - “direct rail connections with European centres will be an important benefit of HS2, as part of the European high speed rail network”;

- “effective national rail and motorway links are also needed to connect the West Midlands to the main centres and markets of the United Kingdom and to serve national journeys travelling through the West Midlands. High Speed Two provides huge benefits to local economies and will release significant rail capacity to benefit towns and cities throughout the wider region”;
- “it is essential that the West Midlands is connected to the European High Speed Rail Network. An international link to Birmingham Interchange and Birmingham city centre HS2 stations will improve economic performance by increasing European connectivity and providing additional national rail capacity. Significant rail capacity for the HS1 – HS2 link is vital to ensure long term delivery of frequent, direct services between the West Midlands, the north of England and mainland Europe”; and
- “as well as the huge benefits for international and national connectivity, the introduction of High Speed Rail to the West Midlands will deliver local passenger and freight rail benefits. Reconfiguration of the local rail network is being carefully considered and forms a major part of the new regional rail vision document – ‘A World Class Rail Network for the West Midlands’, currently being developed by the Regional Rail Forum”.

Centro: Rail Development Strategy (Centro, 2007)

- 2.6.20 In terms of a specific rail development strategy, in 2007 Centro produced a West Midlands Rail Vision: Network Development Strategy. Subsequently, a draft Regional Rail Development Plan was published by Centro in 2009, which led to the establishment of rail development priorities which were agreed by the West Midlands Regional Rail Forum in 2010.
- 2.6.21 More recently, and on behalf of the West Midlands Regional Rail Forum, Centro has been updating the process to establish a regional rail strategy, coordinating a consultation on a draft Rail Vision: A World Class Rail Network for the West Midlands, published for consultation in January 2013.
- 2.6.22 The draft Rail Vision contains sections dedicated to HS2, including
- “a key element in providing extra rail capacity is the new HS2 line which will put the West Midlands at the heart of the future UK strategic transport network. Significantly, HS2 also facilitates a step-change in journey time reductions between the West Midlands and the South East from 2026 and between the West Midlands and the economic centres in Yorkshire, North West England and Scotland from 2032; and
 - with HS2 reshaping the economic geography of the UK and acting as a catalyst for local economic growth, improved connectivity to the new HS2 stations will be essential if the benefits of are the new line to be maximised across the wider West Midlands region”.

- 2.6.23 Therefore 'A World Class Rail network for the West Midlands' sets out a vision for the future development of rail services and infrastructure, in order to allow the regional rail network to play an even greater role in supporting future regional prosperity, higher rates of employment (including the long term structural change towards the knowledge/service economy) and, in particular, in maximising the benefits of the high speed rail network.
- 2.6.24 In addition, in a specific section dedicated to HS2 (entitled Improving Connectivity through HS2), the draft Rail Vision (which was published in April 2013 and, therefore, predates CCC's revised position on HS2, where it is no longer opposes HS2) states:
- "the decision to build HS2, a high speed rail line to deliver much needed and hugely enhanced rail capacity and connectivity between Britain's conurbations will place the West Midlands region at the heart of a new national high speed rail network;
 - whilst the HS2 scheme has widespread support across the West Midlands, it is recognised that at the present time, not all West Midlands Regional Rail Forum members support HS2 and that, in particular, CCC, WCC and SCC oppose the proposed route; and
 - the Rail Vision acknowledges these concerns, but recognises that, now that HS2 is going ahead, the West Midlands must now engage with Government, HS2 Ltd and the rail industry in order to ensure that the benefits of the new line to the wider region are maximised, including use of released capacity on the classic network".

Centro: West Midlands Metropolitan Freight Strategy (Centro, 2013)

- 2.6.25 The West Midlands Metropolitan Freight Strategy was published by Centro in April 2013, with a plan period to 2030. It sets a long term strategy for the movement of freight in the West Midlands Metropolitan area by air, rail, road and water, with a specific section dedicated to HS2 (entitled the Importance of High Speed Rail), including "HS2 will provide additional rail capacity by transferring key intercity corridors from the existing rail network and onto the High Speed Rail network, which will release significant capacity on the existing rail network for additional passenger and freight services".

Greater Birmingham & Solihull Local Enterprise Partnership

- 2.6.26 In line with Government Policy, Local Enterprise Partnerships (LEPs) were established across England in 2011, focusing on economic growth, skills and job creation, but also engaging in issues concerning planning and transport as they related to economic growth.
- 2.6.27 The Greater Birmingham & Solihull LEP has produced a policy document titled Delivering Growth (published in April 2013), setting out a strategic framework for economic growth, and is also preparing a Strategic Spatial Framework Plan which is currently proposed for the end of 2013.

- 2.6.28 The Greater Birmingham & Solihull LEP is strongly supportive of HS2 and states:
- “HS2 is the right choice now and for future generations”;
 - “at GBSLEP we strongly believe development of a High Speed Rail line, connecting our area to London, continental Europe via HS1/Eurostar as well as northern cities and Scotland, is fundamental to achieving our economic ambitions”;
 - “HS2 is forecast to bring substantial economic benefit to our area through jobs, investment and output growth. The new line will provide a step change in the competitiveness of Greater Birmingham”; and
 - “HS2 will also play an important role in addressing rail capacity issues. Investment in a new line will help to ensure local and commuter services using the West Coast Mainline are not displaced in favour of more profitable intercity services as demand continues to grow”.
- 2.6.29 The Greater Birmingham & Solihull LEP continues by stating that the “Board of GBSLEP will be working closely with Government and other stakeholders to ensure all parts of our area benefit from HS2, with improved transport links across the metropolitan area, northern Worcestershire and southern Staffordshire. We will press for appropriate mitigation of any environmental and social impacts, but are committed to ensuring we capture and maximise the economic opportunities and potential of HS2 for the benefit of the whole of our area. HS2 carries the support of the majority of those represented on our Board, but we acknowledge the differing view of Lichfield District Council”.

Black Country Local Authorities

- 2.6.30 With the exception of Dudley Metropolitan Borough Council, the Black Country Metropolitan Local Authorities (Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Walsall Metropolitan Borough Council and Wolverhampton City Council) responded to the DfT on High Speed Rail : Investing in Britain’s Future, welcoming HS2, recognising the benefits of HS2 in terms of connectivity and supporting local economic growth, with the need for connections to the HS2 stations in the West Midlands.
- 2.6.31 The Black Country Local Authorities, working together, produced a joint Core Strategy for the Black Country, which was adopted in 2011, and is the Development Plan Document from which each of the Black Country Local Authorities will prepare individual Local Development Frameworks. The Core Strategy considers transport issues and policies and includes a specific Spatial Objective of delivering a First-Class Transport Network. As part of this objective, it sets an agenda for the transformation of the Black Country transport network, identifying key factors required to enhance the transport infrastructure, including:

- improved accessibility and connectivity of an integrated public transport network;
- improved road network and links to the national M5 and M6 motorway network;
- improved access to the freight railway network; and
- improved walking and cycling provision.

West Midlands & Chilterns Route Utilisation Strategy (Network Rail, 2011)

- 2.6.32 The West Midlands & Chilterns Route Utilisation Strategy (RUS), with a plan period of 30 years, was published in May 2011 and identifies gaps for this part of the rail network. Of which, the most significant gaps are peak crowding on a number of services into and out of central Birmingham; inadequate capacity to accommodate peak demand into Birmingham; potential interchange issues following the completion of the Birmingham New Street Gateway scheme; rail connectivity both within and to and from the West Midlands region; rail connectivity to Birmingham Airport; and capacity to deal with growth in freight services.
- 2.6.33 The West Midlands & Chilterns RUS recommends a range of options to overcome these gaps, including train lengthening and additional services to address capacity. The RUS also considers the potential role of high speed rail, stating:
- “in the longer term, a new high speed line would improve journey times and free up capacity on a number of existing routes”;
 - “the RUS recognises the preferred industry strategy for High Speed Line 2 (HS2) and notes the recent announcements with regard to the proposed strategic HS2 network, which will provide both significant additional capacity and journey time benefits between London and the West Midlands and beyond. The RUS acknowledges that this will create additional capacity on existing routes, and the industry will need to assess opportunities and plans to further optimise its use”; and
 - “the rail network in the RUS area would be significantly affected by the construction of the new high speed line. In addition to the journey time benefits delivered, the introduction of services on a high speed line would create additional capacity on the current rail network”.

West Midlands local transport policy
Birmingham Development Plan

- 2.6.34 Currently, the statutory Development Plan for the City of Birmingham is the Birmingham Unitary Development Plan (UDP), ‘saved policies’ with a plan period to 2011, of which continue to apply (as directed by the Secretary of State) until a replacement Development Plan is adopted.

- 2.6.35 The Birmingham UDP is to be replaced with the Birmingham LDF, with a plan period to 2031, and is now referred to as the Birmingham Development Plan.
- 2.6.36 The Birmingham Development Plan (Formerly the Birmingham Core Strategy) will set out the statutory planning framework to guide decisions on development and regeneration in Birmingham until 2031. It is anticipated that there will be a formal examination, probably in 2014.
- 2.6.37 In 2010, Birmingham CC published the Birmingham Core Strategy Consultation Draft (as part of the LDF process) and in the section on City-wide policies and proposals, Policy SP33 (the transport network) specifically refers to HS2:
- “the Government is planning for construction of a new High Speed Rail route from London to the West Midlands. Birmingham CC supports this major initiative which may commence in the plan period. The principle of a new city centre station integrated with the existing major stations and other transport networks is supported including associated infrastructure”.
 - in terms of HS2 and freight, it also states “the development of a High Speed Rail line between Birmingham and London, linking to HS1 and the Channel Tunnel would widen the opportunities for the transport of freight by rail”.
- 2.6.38 In October 2012, Birmingham CC published a Birmingham Development Plan Options Consultation, which in a section on improving connectivity states:
- “major planned improvements to the City’s national and international accessibility will be brought about by the continued expansion of Birmingham Airport. The expected development of the High Speed 2 rail link will provide further opportunities to build on this success”; and
 - HS2 will provide a high speed link from the City of Birmingham to London and, in due course, Manchester and Leeds, with Birmingham Curzon Street Station the terminus station in the city centre.
- 2.6.39 Birmingham CC has welcomed HS2 with the Council recognising the benefits of having a dedicated station in Birmingham city centre, together with the wider value of HS2 to Birmingham in terms of connectivity, economic growth and job creation.
- Birmingham Big City Plan (BCC, 2011)*
- 2.6.40 The “Birmingham Big City Plan” is a master plan for Birmingham city centre, published by Birmingham CC in 2011 following a previous consultation process.
- 2.6.41 In terms of HS2, the Big City Plan states, a section on connectivity states “in the longer the proposals for high speed rail and the terminus in Eastside will significantly enhance connections with London and potentially Europe. The city centre will need to adapt to enable the connections from the HS2 station to integrate into the wider area. Our approach will have to reflect this”.

- 2.6.42 The Big City Plan goes on to examine development opportunities around HS2 for various 'Quarters' in Birmingham city centre and, in particular, Eastside, which will include the site of the Birmingham Curzon Street Station.

Birmingham Unitary Development Plan (UDP), 'saved policies'

- 2.6.43 The 'saved policies' of the Birmingham Unitary Development Plan (UDP) continue to apply (as directed by the Secretary of State) until a replacement Development Plan is adopted. The most recent Birmingham UDP, with a plan period to 2011, was adopted by Birmingham CC in 2005. In terms of rail, the Birmingham UDP, in Chapter 6 Transport, states "the transport strategy comprises the following principal elements:
- a package of infrastructure improvements including:
 - enhancements of heavy rail lines both to improve accessibility and to aid regeneration in the inner city and city centre, including making use of existing infrastructure....."; and
 - with respect to rail freight:
 - "the City Council supports the increased use of rail for the movement of goods".

Solihull Local Plan (SMBC, 2012)

- 2.6.44 In September 2012 (following earlier consultations as part of the Solihull LDF Core Strategy process), SMBC submitted the Draft Solihull Local Plan: LDF Submission Document to the Secretary of State, which has been the subject of an Examination in Public (between January and March 2013, with the Inspector's Report to follow).
- 2.6.45 HS2 will have an intermediary station in Solihull, the Birmingham Interchange Station, adjacent to Birmingham Airport and the National Exhibition Centre (NEC).
- 2.6.46 In a section on improving accessibility and encouraging sustainable travel, with specific reference to HS2, the Draft Solihull Local Plan Submission Document states:
- "the Government's proposal to introduce a national High Speed rail network could play a key role in future growth in the Borough. However, it would be wrong to assume its development at this stage in the proceedings, in advance of a Hybrid Bill passing through parliament;
 - the alignment through the Borough of the proposed High Speed 2 rail link is shown on the Spatial Strategy Diagram for illustrative purposes only. It will be safeguarded where necessary through national legislation;
 - localised delivery of HS2, both in terms of mitigation of its impacts and securing of its potential benefits, will need to be carefully planned and managed. The Council will prepare an Action Area Plan or Plans or take other appropriate action as and when necessary in this regard"; and

- in the section promoting quality of place: “If the proposal for HS2 and the associated station is realised, a master plan will be prepared to guide the development of the area.”

2.6.47 SMBC supports the principle of HS2, recognising the need for a station to serve Birmingham Airport and the NEC, as well as the need for a direct link between HS1 and HS2 to facilitate direct journeys from the West Midlands to Europe

Solihull Unitary Development Plan (UDP)

2.6.48 Currently, the statutory Development Plan for the SMBC is the Solihull UDP, ‘saved policies’ of which continue to apply (as directed by the Secretary of State) until a replacement Development Plan is adopted. The most recent Solihull UDP, with a plan period to 2011, was adopted by SMBC in 2006.

2.6.49 In terms of rail, Policy T7 states “the Council will, in principle, support the Strategic Rail Authority, Network Rail and other private or public sector bodies in their long term ambitions to upgrade the rail system, including Metro, for passengers and freight travelling through the Borough as part of the wider rail network.....”.

UK Central - M42 Economic Gateway (Solihull, 2013)

2.6.50 SMBC has prepared a strategic master plan for the area of the M42 between Junction 4 and Junction 7, defined as the M42 Economic Gateway and branded as UK Central (including Birmingham Airport, Birmingham Business Park, Blythe Valley Business Park, Jaguar Land Rover and Solihull Town Centre), with a strong emphasis on accessibility, connectivity and transport.

2.6.51 The UK Central (UKC) prospectus includes HS2 and the Birmingham Interchange station, stating that “UKC is the gateway to the West Midlands and home to proposed High Speed Rail”.

2.6.52 The key steps (‘asks’) the scheme seeks include:

- determination of the proposals for High Speed Rail, confirming route and interchanges ;
- a commitment to deliver the Economic Gateway, and Government departments and agencies, including HA and NR, mandated to support development and implementation of the delivery plan, including identifying and addressing statutory process and procedures that inhibit early delivery of investment; and
- ensuring there is a fully coordinated and integrated approach to the Highways Agency, High Speed rail and Aviation Policy, with the support of the Cities’ Asks champion and critical friend.

- 2.6.53 In addition the scheme envisages the following ('offers') "a timely and coherent approach to delivering infrastructure improvements of national significance and benefit – Birmingham Airport, M42, HS2 and Birmingham International Station".

Birmingham Chamber of Commerce Group

- 2.6.54 Birmingham Chamber of Commerce is a strong advocate and supporter of HS2 and has welcomed the proposals for HS2⁴.
- 2.6.55 As part of its policy campaigning, the Birmingham Chamber of Commerce Group (BCCG), which includes Solihull, states that "with demand for rail growing at 6 per cent per annum and the West Coast Mainline predicted to hit capacity in the early 2020s the Chamber is campaigning on behalf of its members to ensure HS2 is built to relieve capacity and reduce journey times".
- 2.6.56 A survey of BCCG members in 2013⁵ revealed "over 71 per cent of businesses support HS2", believing that it will unlock investment; create jobs and make it easier to do business. As such the Chamber has been a vocal advocate of HS2 and works closely with key stakeholders and decision makers to ensure the views of its members are heard.

Birmingham Airport

- 2.6.57 Birmingham Airport is a high profile advocate and a particularly strong supporter of HS2, welcoming the proposals for HS2 and the Birmingham Interchange Station⁶.
- 2.6.58 Birmingham Airport published an Airport Master Plan (with a plan period to 2030) and Airport Surface Access Strategy (with a plan period to 2012) in 2007, both of which included sections on rail access for the Airport and emphasising the importance of rail access to the success of the Airport.
- 2.6.59 As part of the work of the Airports Commission, which is looking at the requirement for additional airport capacity in the UK, Birmingham Airport has emphasised how HS2, together with the Birmingham Interchange Station, can contribute to Birmingham Airport's future development and wider requirements to provide additional airport capacity in the UK.
- 2.6.60 In its Long Term Vision - Plugging the Greater Midlands Region into Global Wealth, published in June 2013, Birmingham Airport states that "the new HS2 station/airport terminal will represent an integrated transport hub for the Midlands providing high speed domestic and long-haul international connectivity for businesses and passengers".

⁴ Birmingham Chambers were one of 26 signatories in an open letter to the Prime Minister, advocating the continued investment and importance of delivering HS2 - <http://www.britishchambers.org.uk/press-office/press-releases/be-bold-on-hs2-and-radical-infrastructure,-bcc-tells-pm.html>

⁵ Source: 26.09.2013 – QES HS2 (BCCG) - <http://www.birmingham-chamber.com/Policy-and-Media/Media/Press-Releases/QES-HS2.aspx>

⁶ Source: <http://www.birminghamairport.co.uk/meta/news/2013/01/bhx-welcomes-hs2-extension.aspx>

National Exhibition Centre

- 2.6.61 The National Exhibition Centre (NEC) is also a supporter of HS2 and the Birmingham Interchange Station⁷.
- 2.6.62 The NEC, in its long term master planning, recognises the importance of access by rail to the success of its exhibition, entertainment and conference facilities, together with the new Resort World Birmingham leisure complex (currently under construction at the NEC and to include a four-star hotel, casino, banqueting and conference facilities, an eleven screen cinema and designer outlet shopping).
- 2.6.63 In terms of HS2, the Chief Executive of the NEC Group comments that:
- 2.6.64 "The NEC Group is increasingly global in both its offer and reach. The prospect of High Speed Rail connecting us to London in less than 40 minutes presents huge growth opportunities for our business, helping to attract events with truly national and international appeal, while boosting business tourism."

⁷ Source: NEC Group is a member of 'Go HS2' - www.necgroup.co.uk/media/69720/necgroup.pdf

3 Proposed Scheme description

3.1 HS2 scheme

- 3.1.1 HS2 is the new high speed railway proposed by Government to connect major cities in Britain. When completed, it will provide a link between London, the Midlands and the North. It will increase the capacity of the rail network to meet future demand and bring people and businesses closer together.
- 3.1.2 HS2 is being developed in two phases. Phase One will link London, Birmingham and the West Coast Main Line and extend for approximately 230km (143 miles). Phase One will also include a link to HS1 in London, allowing some services to continue to mainland Europe via the Channel Tunnel.
- 3.1.3 Phase Two will extend the high speed railway between Birmingham and Leeds and between Birmingham and Manchester, with connections onto the West Coast Main Line south of Wigan and the East Coast Main Line south of York. Phase Two will take the total HS2 network to approximately 565km (352 miles).
- 3.1.4 The currently assumed initial service pattern (day one of operation) is for 11 trains per hour (tph) in each direction during peak hours. Based on the current requirements, it is anticipated that the main route of the Proposed Scheme could operate up to 14tph in each direction during peak hours, increasing up to 22tph in each direction during peak hours once Phase Two becomes operational. The HS1-HS2 Link allows for up to 3tph in each direction.
- 3.1.5 The scheme will operate at up to 360kph (225mph). The alignment of the route has been engineered to allow for train speeds of up to 400kph (250mph) in the future, should there be a commercial justification for doing so. Operation at up to 400kph will require demonstration that improved train design enables services to operate at that higher speed without giving rise to additional significant environmental effects.

3.2 Proposed infrastructure

Stations

- 3.2.2 Four stations are proposed:
- Euston, central London - the existing station will be upgraded and extended by approximately 75m to the west to become the London terminus for the project. Eleven new HS2 platforms will be provided and 13 of the existing 18 platforms will be retained. The upgraded station will include a single modernised concourse and improved connections with rail, London Underground (Northern and Victoria lines and a new direct link with Euston Square underground station) and bus services;
 - Old Oak Common, west London - a new station will be constructed on the site of the existing First Great Western and Heathrow Express depots. It will be an

interchange station; providing six platforms for HS2 services including a connection to HS1, and eight platforms for services on the Great Western Main Line, Crossrail and Heathrow Airport;

- Birmingham Interchange, Solihull - a new station with four platforms will be constructed close to the National Exhibition Centre, to the east of the M42. A people-mover system will provide a direct link to Birmingham International station, the National Exhibition Centre and Birmingham Airport; and
- Curzon Street, central Birmingham - a new terminus station will be constructed within Eastside. It will include seven platforms and a passenger interchange with Moor Street station.

Depots

- 3.2.3 The scheme will include an infrastructure maintenance depot at Calvert (north of Aylesbury) and a rolling stock maintenance depot at Washwood Heath in Birmingham.

3.3 The route

- 3.3.1 Leaving Euston station, the route will descend into the Euston tunnel for approximately 7.4km (4.6miles) curving round to the west, broadly in line with the West Coast Main Line, to the new station at Old Oak Common. This tunnel will require three ventilation shafts, located respectively at Adelaide Road, Alexandra Place and Salusbury Road. Ventilation shafts along the route will require an associated surface structure (known as a 'headhouse'). There will be a link from Old Oak Common, partially in tunnel and partially using an upgraded section of the North London Line, to an existing junction with HS1 north of St. Pancras International station.
- 3.3.2 Upon leaving Old Oak Common station, the route will pass through a crossover box and enter the Northolt tunnel running under Northolt, Ealing and Ruislip for approximately 13.8km (8.6miles), which broadly follows the alignment of the Chiltern Main Line and London Underground Central Line. This tunnel will require four ventilation shafts, located at West Gate, Greenpark Way, Mandeville Road and South Ruislip. The route will emerge from tunnel south of the Ruislip Golf Course at West Ruislip alongside the Chiltern Main Line (Marylebone to Aylesbury Line) and will curve northwards to cross the Colne Valley on an approximately 3.4km (2.1mile) long viaduct.
- 3.3.3 The route will then enter the Chiltern tunnel, an approximately 13.5km (8.4 miles) long tunnel just inside the M25, to pass underneath a section of the Chiltern Hills, including Chalfont St. Giles and the southern edge of Amersham. This tunnel will require four ventilation shafts, located in the vicinity of Chalfont St. Peter, Chalfont St. Giles, Amersham and Little Missenden. The route will emerge from tunnel within the Chilterns AONB on the western side of Hyde Heath.

- 3.3.4 The route will then be in cutting before passing between South Heath and Great Missenden within the approximately 1.2km (0.8mile) long South Heath tunnel. The route will then cross, by viaduct, the Wendover Dean valley and the A413 before passing through the Wendover tunnel, an approximately 1.3km (0.8mile) long tunnel close to Wendover. The route will then pass to the south-west of Stoke Mandeville and Aylesbury, and to the north-east of Waddesdon, largely in cutting or at surface level.
- 3.3.5 At Calvert the route will cross under the former Oxford to Bletchley railway (part of the future East-West Rail Line) where the infrastructure maintenance depot will be located. It will continue to follow the corridor of the former Great Central Main Line railway, largely at surface level or in shallow cutting, before passing to the east of Brackley.
- 3.3.6 The route will then head north-west through open countryside, largely in cutting, but with an approximately 2.1km (1.3miles) long tunnel past Greatworth. It will then enter Chipping Warden tunnel, an approximately 2.5km (1.6miles) long tunnel past Chipping Warden and Aston le Walls, before running largely on the surface towards Ladbroke and Southam. Beyond Southam the route will enter Long Itchington Wood tunnel, an approximately 1.9km (1.2mile) long tunnel, to pass under Long Itchington Wood and Ufton Wood.
- 3.3.7 The route will head between Kenilworth and Coventry, passing Offchurch, Cubbington and through part of the Stoneleigh Park Exhibition and Conference Centre. The route will then enter the Burton Green tunnel, an approximately 0.6km (0.4mile) tunnel, on the alignment of the disused Kenilworth to Balsall Common line (the Kenilworth Greenway) passing through Burton Green.
- 3.3.8 From Burton Green the route will head north-west to cross the Rugby to Birmingham branch of the West Coast Main Line. The route will then curve to the north, past Hampton-in-Arden, towards the proposed Birmingham Interchange station. Leaving the station, the route will head north across the M42 to a triangular junction (known as the 'delta junction') located to the west of Coleshill.
- 3.3.9 Heading north from the delta junction, the route will cross then M6 and M42 and will then split to provide a stub section of track for the proposed eastern leg of Phase Two of HS2 to Leeds at the A4097 Kingsbury Road, to the north-west of Curdworth. Beyond this, the route will cross the M42 for a second time, before curving to the north-west to pass close to Middleton. From Middleton the route will curve past Tamworth, and to the east of Lichfield, before splitting alongside Fradley Park, just to the north of the Trent and Mersey Canal, to provide a stub section of track for the proposed western leg of Phase Two of HS2 to Manchester. The route will turn westwards and connect with the West Coast Main Line to the south of Handsacre.

- 3.3.10 The route into Birmingham city centre from the delta junction will follow the Water Orton rail corridor in the east of the city, initially passing to the north of Castle Bromwich and over the River Tame, where it will enter the Bromford tunnel to the east of the A452 Chester Road. The tunnel will be approximately 2.9km (1.8miles) long and will emerge next to the rolling stock maintenance depot located at Washwood Heath. The route will continue westwards before terminating at the new station at Curzon Street, located within Eastside in Birmingham city centre.

3.4 Potential future connections

- 3.4.1 Provision has been made for extensions to the Phase One network at a later date:
- on either side of the Colne Valley for a future link to Heathrow Airport;
 - at Curdworth, near Coleshill, for a Phase Two extension to Leeds; and
 - east of Lichfield for a Phase Two extension to Manchester.

4 Route-wide methodology and assumptions

4.1 Introduction

- 4.1.1 This chapter sets out the overarching route-wide methodology and assumptions adopted in the preparation of the TA for the Proposed Scheme. Where the methodology or assumptions vary between areas, these are discussed in the regional or CFA sections, as appropriate. Further detail is set out within each of the regional and CFA sections to account for local circumstances.
- 4.1.2 The TA presents an assessment of the Proposed Scheme's impacts on all transport users, including pedestrians, cyclists, equestrians, mobility impaired people, highway users and public transport passengers. It assesses the impacts at stations, interchanges and depots.
- 4.1.3 The Proposed Scheme has been assessed for both the construction and operational phases. The operational phase includes an assessment of Phase One alone, together with an assessment of the Phase Two network's effects on the Phase One infrastructure. In both cases, the assessment has been made assuming future baseline includes demand from existing and committed development in the areas local to the line, with future growth taken either from local planning projections and models or from the DfT's transport forecasting Trip End Model Presentation Program (TEMPO). Sources will include wider growth and proposed development that has not yet been approved but which is included within the assessment. In addition, sensitivity tests have also been undertaken to examine the implications of certain developments or transport system issues (reported in the appropriate regional and CFA sections).
- 4.1.4 The traffic and transport impacts of the Proposed Scheme have been assessed as appropriate through a combination of strategic and detailed modelling exercises, together with more direct assessments of impacts (such as diversion of PRow), as appropriate. The specific approaches taken vary according to the characteristics of the section of the route and the nature of the impact (e.g. whether impacts are expected during the construction and/or operational phases, or whether a station or stations are to be provided within a particular area).
- 4.1.5 The purpose of all of the modelling and assessment work was to ensure that the impacts of the construction and operation of the Proposed Scheme were duly considered, inclusive of:
- providing substantive analysis for the TA;
 - establishing the likely impact and possible traffic and transport mitigation required;

- supporting the Environmental Impact Assessment (EIA) process including the provision of traffic data to inform other assessments;
- informing the engineering design of the Proposed Scheme for both the construction and operational phases of the project; and
- informing engagement with planning authorities and other stakeholders throughout the passage of the HS2 hybrid Bill.

4.1.6 The modelling and assessment work undertaken for the TA is robust because it:

- was undertaken respecting applicable guidance;
- used appropriate and suitably robust tools, taking the full variety of demand generation and responses into account as appropriate;
- was subject to appropriate quality assurance checks; and
- used an objective methodology to reach conclusions.

4.1.7 Where detailed modelling has been undertaken, it has used appropriately enhanced and updated versions of existing best practice models, almost all of which are owned by affected stakeholders and used and/or updated and enhanced in cooperation with them.

4.2 Reporting approach

4.2.1 The TA is generally reported by HS2 County boundary areas to ensure that the it can be clearly understood by all stakeholders , to be consistent with the ES and to allow the different methodologies followed in different areas (e.g. the West Midlands, Country sections and London) to be reported appropriately.

4.3 Relevant guidance

4.3.1 The TA was prepared respecting the NPPF, DfT's Guidance on Transport Assessments (2010) and additional guidance on the preparation of TAs produced by highway authorities along the route (e.g. TfL's Transport Assessment Best Practice Guidance Document,2010). Details concerning the actual sources used are given in the policy section. Where relevant, the regional sections of the TA address specific requirements.

4.3.2 The DfT's Guidance on Transport Assessment provides advice on the types of assessment that should be undertaken based on the scale of the proposed development or scheme. The methodology and approach that should be adopted in each instance is also addressed. Key aspects of DfT's guidance in the context of the assessment of the Proposed Scheme include:

- engaging with the relevant stakeholders at the pre-application stage;
- establishing the existing conditions, as part of the baseline for the assessment;

- reducing the need to travel, especially by car and promoting sustainable access; and
- dealing with residual trips and setting out appropriate mitigation measures.

4.3.3 A TA scoping exercise was undertaken with relevant highway authorities along the route of the Proposed Scheme to facilitate a consistent approach within each section and comparable assessments along the whole route.

4.4 Areas of consideration and key effects

4.4.1 Respecting guidance, the following were considered in the assessment of the construction and operational phases of the Proposed Scheme:

- local land uses;
- traffic surveys;
- highway network – strategic/local road networks and all road users;
- accident and safety analysis;
- parking and loading
- public transport –rail services, light rail, local bus services, coach services and public transport interchanges;
- pedestrians, cyclists and equestrians (non-motorised users) – PRow, pedestrian and cycle networks;
- taxis;
- waterways/canals; and
- air transport.

4.4.2 The following key traffic and transport changes brought about by the Proposed Scheme have been assessed:

- traffic, public transport, pedestrian and cyclist flows;
- road layouts, road closures/diversions/widening/alterations (including stopping and passing places), junction improvements and diversions of rights of way;
- access to properties and places of work (where this is not dealt with directly by the Proposed Scheme design);
- journey times and journey distances for users of private and commercial vehicles;
- accessibility, journey times, distances or frequencies for stations, interchanges and public transport;
- interchange, parking, taxi parking/operation and delivery and servicing;
- bus routes and stop locations; and

- journey times and distances, and changes in amenity and ambience, for vulnerable road users and waterway users.

4.5 Engagement with relevant parties

- 4.5.1 As noted above, a number of stakeholder organisations were consulted during the development of the methodology adopted for the TA. These included local highway authorities, the HA, TfL and CENTRO.
- 4.5.2 Through a series of meetings, discussions and a technical review, a methodology was developed for the preparation of the TA which identified the most appropriate approach to the modelling of the impacts of the Proposed Scheme within different areas.
- 4.5.3 The TA assesses the traffic and transport impacts as far as they extend. The study area was discussed with relevant parties and includes locations further afield where impacts considered could potentially be significant.

4.6 Assessment scenarios

- 4.6.1 The following scenarios were used to assess the Proposed Scheme, and have been summarised in Table 4-1 below:
- baseline – 2012;
 - future baseline - 2021, 2026 and 2041 (to inform the construction and operational assessments);
 - construction – 2021 (this has been adopted as a common assessment year for construction impacts); and
 - operation - 2026 (Opening Year of HS2 Phase One London-Birmingham)
 - operation - 2041 (Opening year plus 15 years, with the addition of HS2 Phase Two – also referred to as the Y-Network – for off-route 2041 with Phase One is considered).

Table 4-1: Strategic modelling scenarios

Assessment scenarios	2012	2021	2026	2041
Base Year	•			
Future Baseline		•	•	•
With HS2 Phase 1 scheme construction		•		
With HS2 Phase 1 scheme construction plus any agreed mitigation		•		
With HS2 Phase 1 scheme operational			•	
With HS2 Phase 1 scheme operational plus any agreed mitigation			•	
With HS2 Y network scheme operational				•
With HS2 Y network scheme operational plus agreed mitigation				•

- 4.6.2 A limited number of sensitivity tests were also undertaken to examine the implications of certain developmental or transport system issues.

Baseline - 2012

- 4.6.3 A summary of the baseline survey information which was collected to inform the assessment for both this TA and the ES is provided in section 5, with summary data in Annex B. It includes a review of traffic survey data, public transport capacity/patronage data, pedestrian flows, accident data and outputs from relevant transport models.
- 4.6.4 Section 5 includes a commentary on the existing transport network in terms of roads, public transport, pedestrian, cycle, equestrian, waterway/canal and air movements and critical links and junctions on the existing highway and public transport networks as appropriate. Where applicable, it presents relevant model output. Local conditions at locations where the scheme will be expected to have an impact are reported.

Future baseline - 2021,2026 and 2041

- 4.6.5 Future baseline scenarios for 2021, 2026 and 2041 were determined using growth factors for population and development forecasts based on recognised good practice sources that are generally used for this purpose by planning and transport authorities (e.g. TEMPRO or TfL's London Plan population and development datasets). In addition committed and planned developments and transport schemes were taken into account, as appropriate, where these were of particular relevance to the assessment.

Construction

- 4.6.6 The construction scenario assessment assumes peak individual construction traffic activity from the overall construction whenever it may occur, in conjunction with 2021 future baseline demands. This provides a consistent basis on which to compare and assess construction impacts across the entire Proposed Scheme. Where construction overlaps the joint impacts have been considered.
- 4.6.7 The construction transport impact assessment addresses the following time periods:
- weekday AM and PM peak hours; and
 - an inter-peak hour when the greatest level of impact is expected to occur in this time period (for example within certain construction assessments).

Operation - 2026 and 2041

- 4.6.8 The operational scenario assessment years are 2026 as the opening year of the Proposed Scheme and 2041, which is year 15 after opening. For the main assessment it is assumed that Phase Two is in operation, primarily of station impacts, reflecting the higher Phase Two passenger demands. Both operational scenarios assume the expected traffic generation of the Proposed Scheme for the relevant year is overlaid on the future baseline flows.

- 4.6.9 The operational transport impact assessments have been primarily carried out for weekday AM and PM peak hours, except where there are particular impacts at other times (such as shift working at depots).

Sensitivity tests

- 4.6.10 A number of potential but uncommitted developments and transport schemes might affect the Proposed Scheme. In order to understand how they might interact with the Proposed Scheme sensitivity tests were considered.
- 4.6.11 The need for sensitivity tests was considered on an area-by-area basis. Where undertaken it not only identified the implications of potential but uncommitted developments and transport schemes for the Proposed Scheme but also often provided a further layer of confidence to the assessment.

4.7 Data collection

- 4.7.1 The TA scoping discussions undertaken with highways and local planning authorities covered the identification of the data required for the TA. This considered both existing data and new data to be collected as part of the TA exercise.
- 4.7.2 Primary data has been collected for traffic, non-motorised users and waterways usage to establish a baseline for existing conditions. Section 5.2 and Annex B provides information on the types of surveys undertaken.
- 4.7.3 Existing data has also been obtained from transport authorities and the DfT. It includes data from the HA's Traffic Flow Data System (TRADS) and count data, Trafficmaster journey time information and accident data in the possession of local transport authorities.

4.8 Background traffic growth

- 4.8.1 As already stated above, the Proposed Scheme was assessed for both the construction and operational phases. Operational phases include assessment of the Phase One in 2026 and 2041, as well as the full Phase Two network effects on Phase One infrastructure in 2041. In both cases, the assessment assumes future traffic growth based on future likely development including both committed and uncommitted but likely future development in the areas local to the Proposed Scheme.
- 4.8.2 In the Country sections, traffic growth factors were directly obtained from TEMPRO version 6.2 which uses the most up to date versions of the National Trip End Model (NTEM 6.2) dataset and the National Transport Model (NTM) 2009. NTEM datasets are long term forecasts, representing the Department for Transport's best estimate of long-term response to demographic and economic trends. The latest version of TEMPRO has been updated with economic data based on recent GDP forecasts. The NTM traffic forecasts take account of forecast changes in fuel costs and changes in trip length over time, which are not included in NTEM.

- 4.8.3 TEMPRO inherently incorporates future planned development irrespective of whether it is approved, committed, or simply included in approved plans. It includes all economic and population growth forecasts, and assumes growth in housing and commercial development, therefore providing a prediction of traffic growth by area. However, there is no explicit assumption concerning which particular developments do or do not go ahead in the derivation of TEMPRO planning data. Consequently, the development review process undertaken as part of this TA has identified, where possible, specific developments in proximity to the Proposed Scheme that could be given explicit consideration in the quantification of background traffic growth.
- 4.8.4 The identification of specific developments in proximity to the Proposed Scheme respected DfT Guidance on Transport Assessments (2007)⁸ and involved:
- a desk-top review of relevant local planning policy emerging from Local Development Frameworks / Local Plans;
 - review of planning applications within 1km of the centreline of the Proposed Scheme; and
 - engagement with local authorities to identify specific committed developments for consideration.
- 4.8.5 Traffic generation from committed developments has only been added to background traffic growth where it is likely to have a direct impact on the transport impacts of the Proposed Scheme and is not already reflected in the background traffic growth from local development already assumed by TEMPRO or local traffic models. The latter minimises the extent of double counting in the traffic growth forecasts.
- 4.8.6 In the case of the London and the West Midlands regional assessments, the use of TEMPRO forecasts was replaced with transport models that were used to assess the implications of the Proposed Scheme. Such models incorporate future year assessment scenarios that take into account growth forecasts using planning data from a variety of sources including and are generally constrained to TEMPRO, but provide a greater degree of disaggregation and more accurately reflect local circumstances.

4.9 Proposed Scheme trip generation and distribution

Construction

- 4.9.2 Construction-related trips include worker trips to and from construction compounds, together with construction vehicles transporting excavated and construction material. Trip generation estimates have been calculated by considering the following, as appropriate:
- identification of the number of worker/person trips travelling to/from a site on

⁸ i.e. developments that have extant planning permission are included in development plan allocations in an adopted or approved plan or specifically advised by local highway authorities.

a daily basis for the identified assessment periods exclusive of travel plan impacts;

- assumptions for modal splits for construction workers to/from the site;
- assumptions for vehicle occupancies for cars/vans; and
- identification of the number of construction vehicles (including HGV) travelling to/from a site on a daily basis for the identified assessment periods.

4.9.3 The distribution and assignment of construction trips were determined taking the following into account as appropriate:

- likely catchment areas for construction workers;
- assumptions regarding construction vehicle (HGV) routeing, in particular the expected requirement for and generation of excavated materials; and
- the potential matches between surpluses and deficit of materials.

4.9.4 The construction scenario assessed assumes peak month of construction traffic activity average flows at individual sites, except where peak impacts result from a combination of activities each of which may not be at peak activity. This provides a consistent and 'maximum most likely' basis against which to compare and assess construction impacts across the entire route. The regional sections of the report explain the methodology adopted where construction sites are in close proximity and in-combination impacts have been assessed.

Operation

4.9.5 Operational trip generation estimates for stations and depots associated with the Proposed Scheme have been calculated including the following, as appropriate:

- forecasts of total peak period and daily trip generations for the identified assessment years, related to passengers and workforce for the proposed HS2 rail services;
- identification of the person trips which are newly generated and/or transferred (from other modes or stations);
- modal shares for passengers and staff, travelling to and from stations and depots;
- likely changes/adjustments to trip generations and trip patterns through modal shift;
- residual trip generation by mode of access;
- vehicle occupancies for cars and taxis; and
- likely profiling within the hour for train arrivals/departures and how this may affect the flow of passengers to and from stations by access modes.

4.9.6 Operational trip distributions and assignments were determined taking the following into account as appropriate:

- likely catchment areas for passengers; and
- likely distributions of trips by mode.

4.10 Construction assessment assumptions

Construction vehicles

4.10.2 Each 'design' element of the Proposed Scheme has been assigned to a construction compound along the route and the transport-related trip generations calculated. The quantities of materials required to construct each element of the scheme, the volumes of fill required or excavated material to be removed, together with the equipment necessary for construction of each element, were identified as part of the design process.

4.10.3 The quantities of materials and equipment have been converted to vehicle loads using typical vehicle payloads in terms of either weight or volume depending on which of these represents the maximum payload capacity constraint for the material being delivered. The total number of construction vehicles forecast to be generated by each compound has been calculated by adding together the forecast number of vehicles estimated to be generated by each 'design' element assigned to any one compound. A further 5% has been added to this to allow for ancillary deliveries that are not captured by the measurement of quantities, e.g. deliveries of welfare supplies for the construction workforce. Eighty percent of the ancillary vehicles were assumed to be LGVs which equates to 4% of all deliveries. All other construction material and equipment delivery vehicles (i.e. 96%) were assumed to be HGVs. Any specific assumptions for individual compounds are included within the regional sections of the TA.

4.10.4 The proposed construction programme identifies when each 'design' element of the scheme is forecast to be constructed. This has enabled the number of vehicles generated per month over the construction duration to be calculated for each compound. From this, the average trip generation per day for each compound was calculated for both the peak month of construction activity and over the whole construction duration for that compound, assuming an average of 20 working days per month. It has been assumed that 15% of the daily deliveries of construction material and equipment occur during the morning peak hour (08:00-09:00) and 5% during the evening peak hour (17:00-18:00). This is based on typical patterns of deliveries at major construction sites. Similarly, it has been assumed that 5% of excavated material removal takes place within the morning peak hour and 20% within the evening peak hour.

- 4.10.5 Vehicle trips generated by deliveries of construction materials and equipment were manually assigned to proposed lorry routes linking construction compounds to the strategic road network. Where a lorry route serves a single construction compound, the average trip generation during the peak month of construction activity for the compound served was assigned to that route. Where a lorry route serves more than one construction compound, the flows from the different compounds were combined and assigned to that route. Where there is not one specific destination and the proposed lorry routes divide, providing a choice of routes, the vehicle trip generation was generally split equally between the route choices available. In a few instances, where applying an equal split would mean that vehicles generated by a particular compound would be taking a longer than necessary route to and from the strategic road network, professional judgment was used to determine splits. Splits assumed in specific locations are included in the regional sections of the TA.

Construction workforce

- 4.10.6 The forecast size of the workforce required at each construction compound per month over the construction programme was estimated from the construction activities associated with each 'design' element assigned to each compound.
- 4.10.7 For compounds with designated accommodation, it has been estimated that a relevant proportion of the workforce will live on site in temporary accommodation during the week. Therefore this proportion of the workforce will not commute on a daily basis. It has also been assumed that all the workers that live on site during the week will return home at weekends. It has been estimated that 40% of the workforce that live on site during the week will leave for home on Friday evenings, with the other 60% leaving at Saturday lunchtime. It has also been estimated that 70% of the workforce that live on site during the week will return from home on Monday mornings, with the other 30% returning during the preceding Sunday evening. This means that for locations with accommodation potentially up to approximately 90% of the total daily workforce leaving on Friday evening and up to approximately 95% of the total daily workforce arriving on Monday mornings.
- 4.10.8 For assessment purposes the total daily construction workforce trip generation has been calculated from the peak day of the week. The morning peak period trip generation has also been calculated from the Monday trip generation, i.e. the greatest morning peak workforce trip generations over the week. The evening peak period trip generation has been calculated from the Friday trip generation, i.e. the greatest evening peak workforce trip generation over the week. These assumptions are considered to reflect a reasonable 'maximum most likely' scenario.

- 4.10.9 The working hours during the week for the majority of construction compounds are assumed to be 08:00-18:00 and 08:00- 13:00 on Saturdays. Details of the hours of operation of compounds are set out within the regional and CFA chapters of the TA. HS2 Ltd will require its contractors to adhere to these core working hours for each site as far as reasonably practicable or unless otherwise permitted. For tunnelling and other works, there will be 24-hour working with shift working, which will generally substantially reduce peak period workforce travel.
- 4.10.10 The method of calculating the car trip generation for the construction workforce varies by individual construction compound as they will be influenced by their accessibility to public transport.
- 4.10.11 Professional judgement was used to determine the likely locations that the workforce will come from, in order to assign the trips generated by the construction workforce to the road and public transport network, taking account of the accessibility by road and public transport of each construction compound.
- 4.10.12 The TA has assumed that 50% of construction workforce trips take place between 08:00-09:00 and 17:00-18:00. However the majority of the construction workforce is likely to commute to work before 08:00 in the morning, in advance of the morning peak 'rush hour' on the road network and consequently the assessments reflect a reasonable 'maximum most likely scenario'.
- 4.10.13 A construction workforce travel plan will be required for each compound, which will seek to reduce the overall vehicle trip generation, especially during the morning and evening peak periods. This is explained in more detail later in this section. The proposed framework is included in Annex A. However, the workforce trip generation methodology described above does not take account of this and consequently adverse traffic effects may be overstated.

Excavated materials

- 4.10.14 The method used to forecast the number of trips generated by the movement of excavated material by road where it is not practical to move material along the line of the route via the haul road or via rail, and their assignment to the road network is described below.
- 4.10.15 The Proposed Scheme design identifies where there is forecast to be either a surplus or shortfall of material along the route and the most practical and efficient approach to re-using excess excavated material in locations where there is a shortfall. It also identifies the quantity of excavated material that needs to be moved by road because it is not practical to move it by any other means, e.g. by rail or via the haul road along the route. The quantity of material to be moved has been converted to vehicle loads using typical vehicle payloads. These are taken into account in the assessments for each CFA.

- 4.10.16 In many cases the excess excavated materials generated in one CFA and creating HGV movements there, will also be represented in another CFA that requires and utilises the material (for example to construct embankments).
- 4.10.17 The Proposed Scheme design identifies when excavated material needs to be moved to or from a location. This has enabled the number of vehicle trips generated per month to be calculated for each location. It has been assumed that material will be moved at a constant rate per eight-hour weekday and per month over the required period during the construction programme. The trip rate per hour over the day is therefore 1/8th (13%) of the daily trip rate. No adjustment has been made for works on Saturdays.
- 4.10.18 The origins and destinations of HGV trips moving excess excavated material by road have been identified. The vehicle trips generated by the movement of excavated material have generally been assigned to the shortest route between identified origins and destinations via the proposed construction routes and trunk road network.

4.11 Mitigation measures

- 4.11.1 Mitigation proposals have been included in the Proposed Scheme design, where appropriate and reasonably practicable, in order to 'design out' impacts, both for construction and operation scenarios. The TA has therefore been progressed alongside the design process and mitigation proposals have become an integral part of the design process to minimise impacts so far as reasonably practicable at an early stage.
- 4.11.2 Consideration has been given to the provision of further mitigation measures within the appropriate section of the TA, with assessment of these as appropriate and necessary.
- 4.11.3 For necessary off-site mitigation the general approach has been to identify an indicative feasible and effective option (or options) that would address the mitigation need. Further detailed discussions would take place with transport authorities. Rather than detailed prescriptive design options this recognises that off-site interventions should be considered in the context of wider objectives of local authorities and through subsequent dialogue an improved mitigation plan may be developed.
- 4.11.4 A draft Code of Construction Practice (CoCP) (see Volume 5: Appendix CT-003-000/1) has been developed which contains control measures and the standards to be implemented throughout the construction of Phase 1 of the HS2 project.
- 4.11.5 In particular, the draft CoCP sets out various mitigation measures to reduce the impact of construction traffic which have been included in the construction transport assessments, including:
- excavated material will be reused wherever reasonably practicable along the alignment of the Proposed Scheme which will reduce the effects of construction vehicles on the public highway;

- use of internal haul routes for construction vehicles to minimise the need to use public roads; and
- agreed routes for construction (HGV) vehicles, keeping to the main road network (e.g. motorways and all-purpose trunk roads and other 'A' roads) wherever reasonably practicable.

4.11.6 In addition, the draft CoCP assumes the following controls on construction material and workforce travel, although more pessimistic assumptions have been taken for the demand profile of construction trips as outlined in this chapter, to assess a 'maximum most likely' demand scenario:

- core site operating hours will be 08:00-18:00 on weekdays and 08:00-13:00 on Saturdays and site staff and workers will therefore generally arrive before the morning peak hour and depart after the evening peak hour.
- where reasonably practicable, the number of private car trips to and from the site (both workforce and visitors) will be reduced by encouraging alternative modes of transport or vehicle sharing; and
- some workers will be resident at accommodation sites reducing the need to travel.

4.11.7 The draft CoCP states that traffic management measures and plans will be prepared in consultation with local highway authorities during the detailed design process. Indicative assumptions of how these might be delivered in each area have been included within the appropriate section in this report.

4.12 Framework Travel Plan

4.12.1 An overarching Framework Travel Plan has been produced that requires how travel plans to be used along with a range of associated potential measures to mitigate the impact of transport associated with construction, maintenance and operation of the Proposed Scheme, in particular by reducing commuting by car and encouraging use of sustainable transport. The scope of this includes:

- a construction workforce travel plan – the framework will to inform site specific plans which will be required to be produced and in particular to reduce workforce commuting by private car, especially sole occupancy car travel. Where practical, this will also encourage the use of sustainable modes of transport;
- operation of new depots and stations (Euston, Old Oak Common, Calvert, Birmingham Interchange, Washwood Heath, Curzon Street) – the framework provides guidance on the expected contents of a station or depot specific travel plan;
- details of the requirements for setting targets for encouraging sustainable travel- to link into those already proposed for Euston;
- consideration of occasional maintenance activities; and

- consideration of how delivery and servicing and car parking management plans should be linked in with the station/ depot specific plans.

4.12.2 Where adverse impacts are predicted to occur at some distance from the Proposed Scheme, this has been assessed within the TA. The need for off-site mitigation has been considered and potential mitigation measures have been assessed, where appropriate. Such measures may include improved pedestrian or cycle facilities, revised bus stop arrangements and junction modifications such as signal timing changes or advanced signal controllers. The general approach will be to facilitate improved access by sustainable modes.

4.13 Modelling approach

4.13.1 The traffic and transport impacts of the Proposed Scheme were assessed as appropriate using a combination of strategic and detailed models, together with more direct assessments of impacts (such as for diversion of PRoW). The specific approaches taken vary according to the different sections of the route and the nature of the impact, as appropriate. In particular, areas with complex transport networks or more complex impacts have been addressed with more comprehensive modelling approaches than those where the networks are simpler or the impacts are unlikely to have wide-spread effects. Hence a different, simpler approach was adopted for the country sections of the route compared to those in built-up and developed metropolitan areas (i.e. London and the West Midlands). Similarly, within the West Midlands, a different approach was adopted for areas of more intense and longer term activity around new station locations compared to locations around construction sites (e.g. Balsall Common).

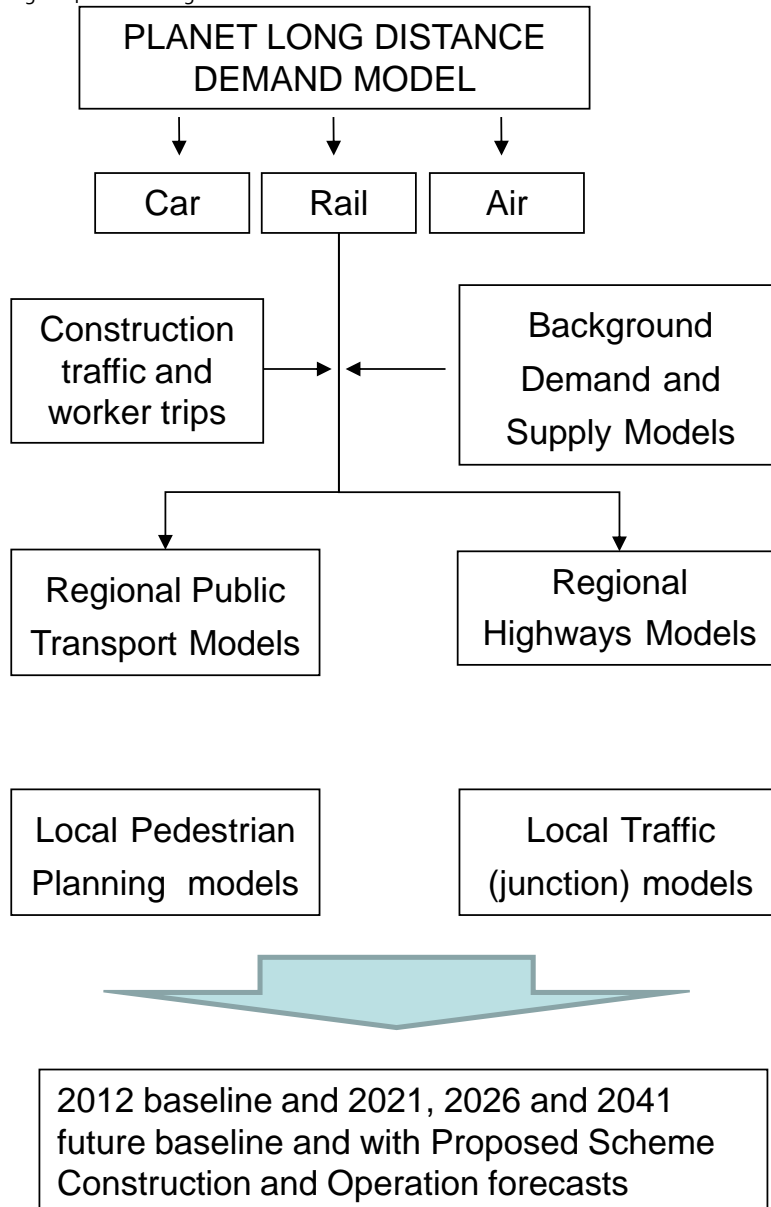
4.13.2 The following outlines the high level modelling approach used to assess the Proposed Scheme. Detail of the approach used within each of the Regional and CFA sections to account for local circumstances.

Modelling framework

4.13.3 The modelling framework for the entire Proposed Scheme is shown in Figure 4-1. The key modelling elements that have been incorporated are:

- estimates of the trip generation and changes to travel patterns as a result of the proposed scheme in both construction and operation;
- sources of estimates of the baseline and future baseline travel demands in the area of the Proposed Scheme for both highway and public transport as necessary;
- modelling tools to establish the detailed travel patterns for future baseline and the future baseline with the Proposed scheme; and
- as necessary, detailed modelling tools to investigate very local impacts.

Figure 4-1: Modelling framework



4.13.4 The models and sources that have been used can be summarised as:

- strategic long distance rail demand modelling for both future baseline and the changes resulting from the Proposed Scheme:
 - the PLANET Framework of Models (PFM) - PLANET Long Distance, PLANET Midland, PLANET South and the PLANET Station Choice Model (SCM);
- regional multi-modal transport modelling to provide future baseline travel demands:
 - within London, Transport for London's London Transport Studies (LTS);
 - within the West Midlands, data and outputs from the West Midlands Authorities' and HA's Policy Responsive Integrated Strategy Model (PRISM) model comprising of a demand model and strategic highway/public transport models; and
 - in country/more rural areas, use of the DfT's Trip End Model Presentations

Programme (TEMPRO) to provide growth factors for individual road types and relevant wards.

- regional public transport modelling/analysis of detailed public transport use and impacts of the Proposed Scheme compared to future baseline:
 - within London, enhanced version of Transport for London's Railplan Model; and
 - within the West Midlands, an analysis of the impacts on the public transport network using PFM outputs.
- regional highway assignment modelling to provide future baseline traffic flows and congestion/delays and changes as a result of the Proposed Scheme:
 - within London, updated and enhanced versions of the strategic highway assignment models developed by TfL - the Central London Highway Assignment Model (CLoHAM) and West London Highway Assignment Model (WeLHAM) models;
 - within the West Midlands, updated and enhanced versions of the Birmingham City Centre model (for impacts associated with Curzon Street station) and specially developed or adapted strategic highway and microsimulation models (for impacts associated with Birmingham Interchange Station); and
 - in country/more rural areas, baseline counts, TEMPRO and local modelling (as discussed below) is used.
- local junction modelling as required:
 - local junction modelling using traffic analysis software packages such as TRANSYT, ARCADY, PICADY and LINSIG were used to supplement higher level modelling in London and West Midlands or alone in the Country areas.

4.13.5 The strategic highway models have been developed in the industry-standard Saturn modelling suite and the microsimulation modelling in VISSIM.

4.13.6 Construction traffic demands have been generated by the HS2 Ltd engineering teams relating to the scale, rate and type of construction activity and the expected workforce numbers.

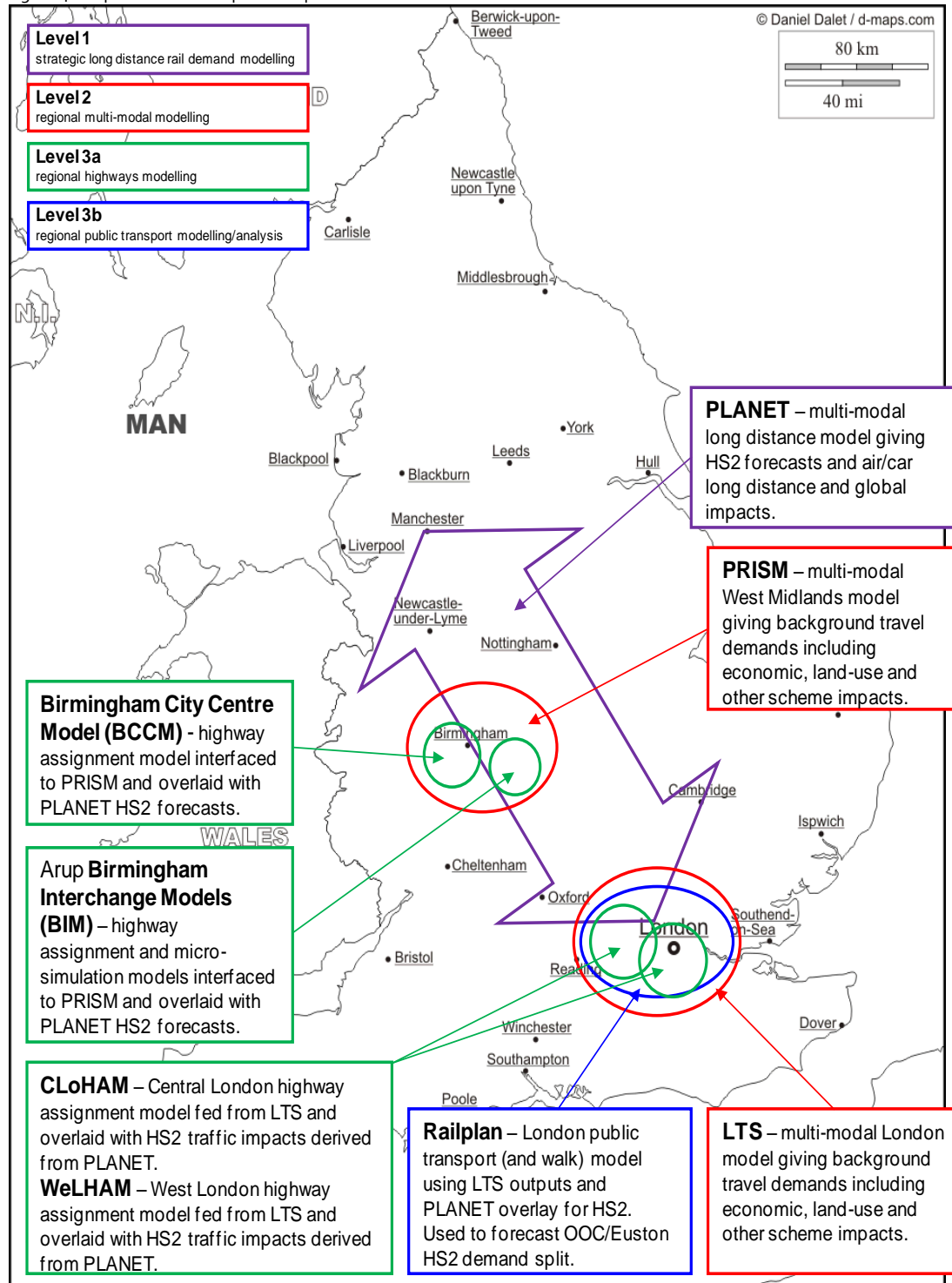
4.13.7 In broad terms, the changes to travel demands arising from the Proposed Scheme are established through:

- in construction, the estimates of travel generation from the HS2 Ltd engineering teams;
- in operation, for workforce, including station and depots, the estimates of travel generation from the HS2 Ltd engineering and operations teams; and
- in operation, for passenger demands, application of the outputs from the PLANET model together with regional/local estimates/assumptions of access modes and distribution of origins and destinations.

4.13.8

The same information shown in Figure 4-1 and outlined above is presented again in a different form in Figure 4-2 to indicate the spatial relationships and dependencies between the different models used in the TA.

Figure 4-2: Spatial relationships and dependencies between models



- 4.13.9 The PLANET Framework Model provides rail, HS2 demand forecasts and air/car long distance impacts. Practically speaking, PFM is exogenous to the TA modelling, supplying outputs from the various PLANET components to the regional modelling.

- 4.13.10 The regional baseline and future baseline is provided in the modelling hierarchy by the LTS and PRISM multi-modal models for London and the West Midlands. While neither of these models has any direct functional relationship with PLANET, they are both important to the assessment of the Proposed Scheme in terms of supplying background travel demands and growth (including economic, land-use and other scheme impacts) for the regional highway and public transport modelling.

- 4.13.11 Importantly, all of the demand models, including TEMPRO, are driven by comparable data sources for population, employment and economic activity. Inevitably, as the assessment moves from the macro UK-wide forecasts to the micro local level more specific local estimates of development are used.

- 4.13.12 Updated and enhanced versions of TfL's Railplan public transport model, and TfL's CLoHAM and WeLHAM highway models, supplemented with local network and junction modelling (not indicated in Figure 4-2) using traffic analysis software packages like TRANSYT, PICADY, ARCADY, LINSIG and VISSIM, provide the detailed level of modelling within London. As indicated in Figure 4-2, the Railplan, CLoHAM and WeLHAM models are all informed by LTS and for operation also incorporate an HS2 overlay comprising either PLANET HS2 demands or PLANET-derived traffic impacts. For construction trips are similarly overlaid onto the future baseline. Railplan covers public transport modelling across the whole of London. CLoHAM and WeLHAM cover highway modelling in central and west London respectively.

- 4.13.13 The Birmingham City Centre and the two Birmingham Interchange highway assignment models (BCCM and BIM respectively), supplemented with more localised and/or detailed network and junction modelling using traffic analysis software packages like TRANSYT, PICADY, ARCADY, LINSIG and VISSIM, provide the detailed level of modelling within the West Midlands. As indicated in Figure 4-2, the BCCM and BIM highway assignment and micro-simulation models have an interface with the regional PRISM multi-modal model data and outputs and are overlaid by PLANET forecasts for operation and estimates of construction trips for construction.

- 4.13.14 DfT's WebTAG and DMRB provide advice concerning a variety of modelling issues that modelling exercises should consider and address as appropriate. Table 4-2 indicates where the most important of these issues are accommodated in the HS2 modelling framework. Importantly, all of the issues, including demand responses, are accommodated at some point in the modelling framework. More detailed descriptions of the component models, including validation and performance details, are provided at the appropriate point in this document.

4.13.15 The PLANET model is discussed below and the role and use of the other models are discussed within the regional sections of the TA.

Table 4-2: TA modelling framework versus modelling issues

Modelling issue		Route section		
		London	West Midlands	Country
1	Scale/extent	All HS2 TA modelling ⁹		
2	Abstraction from other modes/ services	HS2 PLANET line demand estimates and effects on air, car and rail		N/A
		HS2 Railplan	N/A	N/A
3	Generation from Proposed scheme	HS2 construction traffic estimates		
		HS2 PLANET line demand estimates (inclusive of ultimate trip Origins and Destinations)		N/A
		Station access mode split estimates at local level		
4	Distribution	HS2 PLANET line demand estimates (inclusive of ultimate trip Origins and Destinations)		N/A
		LTS for future baseline	PRISM for future baseline	
		HS2 Railplan for HS2 onward distribution		
		Manual trip assignment		
5	Mode choice/split	LTS	Elasticity-based adjustments to BCC and BIM SATURN forecast demands ¹⁰	N/A
		Station access mode split estimates		
6	Assignment	HS2 CLoHAM and HS2 WeLHAM	BCCM	Manual
			BIM SATURN	
7	Traffic operations & conditions	HS2 CLoHAM and HS2 WeLHAM	BCCM	ARCADY, PICADY, LINSIG & Excel-based calculations
		Euston TRANSYT and OOC TRANSYT	BIM SATURN	
		Euston VISSIM	BIM VISSIM	
8	Background growth	LTS	PRISM	TEMPRO
		Consented development adjustments as appropriate		
9	Variable demand responses	LTS	Elasticity-based adjustments to BCC and BIM SATURN forecast demands ³	
10	Convergence	All HS2 TA modelling where convergence is relevant ¹¹		
11	Validation	All HS2 TA modelling where validation is relevant ¹²		

⁹ Coverage and definition of all TA modelling determined by nature and extent of expected impacts. Many TA models cover areas far larger than the actual area of impact (e.g. HS2 CLoHAM, WeLHAM and Railplan models).

¹⁰ Elasticity-based approach adopted because of (1) extent of BCC and BIM SATURN models, (2) nature and scale of likely demand response and (3) current absence of suitably dis-aggregate multi-modal model to account for full range of demand responses.

¹¹ e.g. HS2 CLoHAM, WeLHAM and Railplan models and BCCM and BIM models.

¹² e.g. HS2 CLoHAM, WeLHAM and Railplan models, BCCM and BIM models and Euston and OOC TRANSYT models

PLANET

- 4.13.16 The PLANET Framework Model (PFM) is the DfT's forecasting model which has been used to develop rail demand forecasts as a result of the Proposed Scheme. PFM is the most appropriate modelling tool to be used in terms of forecasting the demand of the Proposed Scheme given its strategic capability, covering all long distance rail movements across England, Scotland and Wales.
- 4.13.17 The PLANET Framework Model has been developed with an extensive quality assurance (QA) approach undertaken consistent with the Department for Transport's (DfT) guidance. This has included extensive developer quality assurance, peer reviews and independent implementation audit.
- 4.13.18 The PLANET Long Distance Framework (PLDF) consists of three PLANET passenger demand models together with a Station Choice Model (SCM) integrated into a single framework. These models are:
- The PLANET Long Distance Model (PLD), providing the long distance rail demand;
 - PLANET Midlands Model (PM), providing the shorter distance rail demand with the West Midlands;
 - PLANET South Model (PS), providing the shorter distance movements within the South; and
 - SCM, providing boardings and alightings at individual stations within the areas covered by PM and PS.
- 4.13.19 The hierarchy of models used in the TA utilised passenger demand data derived from PFM. PFM is the product of a comprehensive programme of additional work to improve the robustness of the modelling and appraisal with updated assumptions underlying the forecasts to reflect recent political and economic changes.
- 4.13.20 The PFM demand forecasts are based on the latest outline service specifications, which are consistent with the HS2 Ltd Business and Economic cases.
- 4.13.21 PFM takes into account a wide range of impacts on travel behaviour such as journey time, train service frequency, interchange (both between modes and within modes), crowding, and station access/egress times. In the integrated framework the interaction between long distance and local demand is represented. Further details concerning the constituent models forming PFM are provided below.

PLANET Long Distance (PLD)

- 4.13.22 PLANET Long Distance (PLD) is derived from the PLANET Strategic Model. It is a multi-modal 16 hour model focusing on long distance demand by rail, highway and internal point to point air movements within Great Britain.

- 4.13.23 A single timetable of journey times, service frequencies and other supply characteristics is used to produce 16 hour forecasts. The model is incremental in nature, forecasting the change in demand as a result of an intervention from an exogenously defined future year do-minimum demand matrix.
- 4.13.24 A Station Choice Model is incorporated into the model to assess how passengers will access long distance rail services in Greater London and the West Midlands.
- 4.13.25 Access/egress information on journey times and distance for the SCM is taken from local transport models in London and Birmingham: Railplan (owned by TfL) and PRISM (owned by West Midland local transport authorities and HA) respectively. Access to stations outside these areas is modelled using the highway links represented in PLD.
- 4.13.26 PLD provides:
- Base Year Daily (16 hour) boarding and alightings, together with the AM peak period covering the 3 hour period between 0700 and 1000 both with and without interchanges where applicable. Boardings and alightings are provided for New Street, International and Moor Street Birmingham stations and Euston and Kings Cross London Stations;
 - Forecast Year (16 hour) boardings and alightings, together with the AM peak covering the 3 hour period between 0700 and 1000 both with and without interchanges where applicable. Boardings and alightings are provided for the New Street, International, Moor Street and the proposed Curzon Street and Birmingham Interchange stations in or close to Birmingham and Euston, Kings Cross and the proposed Old Oak Common stations in London; and
 - boardings and alightings are provided in origin-destination format, together with details of access and egress mode at both the 16 hour and AM peak period levels.

PLANET South (PS) and PLANET Midlands (PM)

- 4.13.27 As part of the overall PLANET suite, PLANET South (PS) and PLANET Midlands (PM) have been used to derive more detailed travel costs and forecasts of station use as part of the overall forecasting process. Within this TA, the only use made of this has been in the assessment of off-route impacts. PLANET South (PS) is a tool for modelling local movements on the London and South East rail network. It is a morning peak period (07:00 to 10:00) rail-only model, and includes all local services in the south of England, as well as the strategic services from other areas into London. To represent passengers on strategic services in PS model runs, demand has been loaded onto the network at cordon points, to ensure that crowding levels are correctly represented.

- 4.13.28 PLANET Midlands (PM) is similar to PLANET South, but covers a smaller area, only covering services that are local to Birmingham itself. Again, it is a morning peak period (0700 to 1000) rail-only model with strategic demand passed from PLD in the form of link based pre-loads to ensure that crowding levels are correctly represented. The extent of the model broadly covers the West Midlands counties (i.e. reaches out as far as Wolverhampton and Coventry).